UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

☒ **Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**
for the fiscal year ended December 31, 2021

☐ **Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

for the transition period from _____ to _____

Commission file number: 001-16133

DELCATH SYSTEMS, INC.

Delaware	**06-1245881**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
1633 Broadway, Suite 22C New York, NY	**10019**
(Address of principal executive offices)	**(Zip Code)**

212-489-2100
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, $0.01 par value per share	**DCTH**	**The NASDAQ Capital Market**

Securities registered pursuant to Section 12(g) of the Act: None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☐
Non-accelerated filer ☒ Smaller reporting company ☒
Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

Auditor PCAOB ID Number: 688 Auditor Name: Marcum LLP Auditor Location: New York, NY

The aggregate market value of the common stock held by non-affiliates of the registrant, based on the closing sale price on the Nasdaq Capital Market of $12.61 per share, as of June 30, 2021, the last business day of the registrant's most recently completed second fiscal quarter was $86,911,449.

At March 30, 2022, the registrant had outstanding 7,906,728 shares of common stock, par value $0.01 per share.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the 2022 Annual Meeting of Stockholders are incorporated by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2021.

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Disclosure Regarding Forward-Looking Statements

This Annual Report on Form 10-K for the period ended December 31, 2021 contains certain "forward-looking statements" within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995 with respect to our business, financial condition, liquidity, and results of operations. Words such as "anticipates," "expects," "intends," "plans," "predicts," "believes," "seeks," "estimates," "could," "would," "will," "may," "can," "continue," "potential," "should," and the negative of these terms or other comparable terminology often identify forward-looking statements. Statements in this Annual Report on Form 10-K for the period ending December 31, 2021 that are not historical facts are hereby identified as "forward-looking statements" for the purpose of the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and Section 27A of the Securities Act of 1933, as amended, or the Securities Act. These forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements, including the risks discussed in this Annual Report on Form 10-K for the fiscal year ended December 31, 2021 in Item 1A under "Risk Factors" and the risks detailed from time to time in our future SEC reports. These forward-looking statements include, but are not limited to, statements about:

- our estimates regarding sufficiency of our cash resources, anticipated capital requirements and our need for additional financing;
- the commencement of future clinical trials and the results and timing of those clinical trials;
- our ability to successfully commercialize CHEMOSAT and HEPZATO, generate revenue and successfully obtain reimbursement for the procedure and system;
- the progress and results of our research and development programs;
- submission and timing of applications for regulatory approval and approval thereof;
- our ability to successfully source certain components of CHEMOSAT and HEPZATO and enter into supplier contracts;
- our ability to successfully manufacture CHEMOSAT and HEPZATO;
- our ability to successfully negotiate and enter into agreements with distribution, strategic and corporate partners; and
- our estimates of potential market opportunities and our ability to successfully realize these opportunities.

Many of the important factors that will determine these results are beyond our ability to control or predict. You are cautioned not to put undue reliance on any forward-looking statements, which speak only as of the date of this Annual Report on Form 10-K. Except as otherwise required by law, we do not assume any obligation to publicly update or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this Annual Report on Form 10-K or to reflect the occurrence of unanticipated events.

This Annual Report on Form 10-K and the information incorporated herein by reference may include trademarks, service marks and trade names owned or licensed by us, including CHEMOFUSE, CHEMOSAT, CHEMOSATURATION, DELCATH, HEPZATO, HEPZATO KIT, PHP and THE DELCATH PHP SYSTEM. Solely for convenience and readability, trademarks, and trade names, including logos, artwork and other visual displays, may appear in a non-traditional trademark usage manner, including without the ® or TM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks, service marks and trade names. All trademarks, service marks and trade names included or incorporated by reference into this Annual Report on Form 10-K are the property of the Company or the Company's licensor, as applicable.

SUMMARY OF THE MATERIAL RISKS ASSOCIATED WITH OUR BUSINESS

- Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern.
- Drug development is an inherently uncertain process with a high risk of failure at every stage of development. On February 12, 2013, we received a complete response letter from the FDA declining to approve our New Drug Application, or NDA, in its then current form. We are preparing to file a revised NDA with the FDA; however, there is no guarantee that the FDA will accept our revised NDA, or ultimately approve it.
- The Company does not expect to generate significant revenue for the foreseeable future.
- Continuing losses may exhaust our capital resources.
- If we cannot raise additional capital, our potential to generate future revenues will be significantly limited since we may not be able to further commercialize CHEMOSAT and HEPZATO, complete our clinical trials or conduct future product development and clinical trials.
- Our failure to obtain, or delays in obtaining, regulatory approvals may have a material adverse effect on our business, financial condition and results of operations.
- We have obtained the right to affix the CE Mark for the CHEMOSAT Hepatic Delivery System as a medical device for the delivery of melphalan. Since we may only promote the device within this specific indication, if physicians are unwilling to obtain melphalan separately for use with CHEMOSAT, our ability to commercialize CHEMOSAT in the EU will be significantly limited.
- We are subject to significant ongoing regulatory obligations and oversight in the EU and will be subject to such obligations in any other country where we receive marketing authorization or approval.
- The development and approval process in the United States is time consuming, requires substantial resources and may never lead to the approval of HEPZATO by the FDA for use in the United States. The FDA may reject our resubmission or refuse to approve the New Drug Application for HEPZATO.
- If future clinical trials are unsuccessful, significantly delayed or not completed, we may not be able to market HEPZATO for other indications.
- We may not be able to obtain or maintain orphan drug designation or exclusivity for our product candidates.
- We rely on third parties to conduct certain elements of the clinical trials for CHEMOSAT and HEPZATO, and if these third parties do not perform their obligations to us, we may not be able to obtain regulatory approvals for our system.
- Purchasers of CHEMOSAT in the EU may not receive third-party reimbursement or such reimbursement may be inadequate. Without adequate reimbursement, commercialization of CHEMOSAT in the EU may not be successful. The success of any of our products may be harmed if the government, private health insurers or other third-party payers do not provide sufficient coverage or reimbursement.
- CHEMOSAT and HEPZATO may not achieve sufficient acceptance by the medical community to sustain our business.
- We may be subject, directly or indirectly, to federal and state health care fraud and abuse laws, false claims laws and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.
- Compliance with laws and regulations pertaining to the privacy and security of health information may be time consuming, difficult and costly for us, particularly in light of increased focus on privacy issues in countries around the world, including the U.S. and the EU.

- Changes in health care law and governmental policies and initiatives with respect to health care, including government restrictions on pricing and reimbursement and other health care payor cost-containment initiatives, may have a material adverse effect on us.
- The ongoing COVID-19 pandemic and the future outbreak of other infectious or contagious diseases, could continue to harm and/or delay our research, development and commercialization efforts, increase costs and materially and adversely affect our business.
- Consolidation in the healthcare industry could lead to demands for price concessions.
- We may not be able to enter into or maintain acceptable arrangements for the supply of components and/or raw materials needed for the manufacture of HEPZATO and/or CHEMOSAT.
- If we cannot maintain or enter into acceptable arrangements for the production of melphalan and other chemotherapeutic agents we will be unable to successfully commercialize HEPZATO in the United States or complete our global Phase 3 trial in ocular melanoma liver metastases, registration trial in ICC, or any future clinical trials.
- If we cannot successfully manufacture CHEMOSAT and HEPZATO, our ability to develop and commercialize the system would be impaired.
- Even if we receive FDA or other foreign regulatory approvals, we may be unsuccessful in commercializing product in markets outside the EU, because of inadequate infrastructure or an ineffective commercialization strategy.
- Our plan to use collaborative arrangements with third parties to help finance and to market and sell CHEMOSAT and HEPZATO may not be successful.

Item 1. Business.

Unless the context otherwise requires, all references in this Annual Report on Form 10-K to the "Company", "Delcath", "Delcath Systems", "we", "our", and "us" refers to Delcath Systems, Inc., a Delaware corporation, incorporated in August 1988, and all entities included in our consolidated financial statements. Our corporate offices are located at 1633 Broadway, Suite 22C, New York, New York 10019. Our telephone number is (212) 489-2100 and our internet address is www.delcath.com.

Company Overview

We are an interventional oncology company focused on the treatment of primary and metastatic liver cancers. Our lead product candidate, the HEPZATO™ KIT (melphalan hydrochloride for injection/hepatic delivery system), or HEPZATO, is a drug/device combination product. HEPZATO is designed to administer high-dose chemotherapy to the liver while controlling systemic exposure and associated side effects. In Europe, our commercial product is a stand-alone medical device having the same device components as the HEZPATO but without the melphalan hydrochloride, is designated as a Class III medical device, and is approved for sale under the trade name CHEMOSAT® Hepatic Delivery System for Melphalan, or CHEMOSAT, where it has been used at major medical centers to treat a wide range of cancers of the liver.

In the United States, HEPZATO is considered a combination drug and device product regulated by the United States Food and Drug Administration, or the FDA. Primary jurisdiction for regulation of HEPZATO has been assigned to the FDA's Center for Drug Evaluation and Research. The FDA has granted Delcath six orphan drug designations (five for melphalan in ocular melanoma, cutaneous melanoma, cholangiocarcinoma, hepatocellular carcinoma, and neuroendocrine tumor indications and one for doxorubicin in the hepatocellular carcinoma indication). HEPZATO has not been approved for sale in the United States.

In December 2010, the Company submitted a new drug application, or NDA, to the FDA seeking the approval of its first generation melphalan hydrochloride for injection/hepatic delivery system. In response, in February 2011, the FDA issued a Refusal-to-File letter. The Company responded to the FDA's letter and updated its delivery system, including modifications to the system's filter. In September 2013, the FDA issued a Complete Response Letter, or CRL, to the Company's NDA requesting, among other things, that the Company perform an adequate and well controlled study utilizing its updated delivery system.

In response to the CRL, in 2016, the Company began enrolling patients in the FOCUS Clinical Trial for Patients with Hepatic Dominant Ocular Melanoma (the "FOCUS Trial"), a global registration clinical trial studying HEPZATO's safety and efficacy treating metastatic ocular melanoma, or mOM. The FOCUS Study was originally designed as a randomized controlled trial comparing HEPZATO versus the Best Alternative Care (BAC) with a primary endpoint of overall survival. Due to significant challenges enrolling patients into the Trial, including the fact that the BAC arm was known to have limited efficacy and the availability of CHEMOSAT in Europe, in 2018, the Company and FDA agreed to amend the FOCUS Trial to a single-arm, nonrandomized trial with a primary endpoint of Overall Response Rate (ORR) and a secondary endpoint of Duration of Response (DOR). The last patient in the FOCUS trial was treated in May 2021 and, per the Study's statistical plan, a final predefined exploratory survival analysis, versus the Best Alternative Care (BAC), will be conducted twenty-four months from the date of the last patient treated.

In December 2021, the Company announced that HEPZATO met its prespecified endpoint. Based on the FOCUS Trial results, the Company is preparing to file a revised NDA for HEPZATO. Depending on feedback from FDA, we hope to file the revised NDA by mid-2022.

CHEMOSAT is available in select markets in the United Kingdom and the European Union. In December 2018, we entered into a license agreement with medac GmbH, for the commercialization of CHEMOSAT in Europe. The license agreement has been terminated and, as of March 1, 2022, we have begun directly marketing CHEMOSAT in these markets. In addition, on February 28, 2022, CHEMOSAT received Medical Device Regulation (MDR) certification under the European Medical Devices Regulation [2017/745/EU].

In addition to HEPZATO's use to treat mOM, we believe that HEPZATO has the potential to treat other liver dominant cancers, such as Metastatic Colorectal Cancer and Cholangiocarcinoma, and plan to begin the study of HEPZATO to treat such conditions in the near future.

Cancers in the Liver—A Significant Unmet Need

According to the American Cancer Society's, or ACS*, Cancer Facts & Figures 2022* report, cancer is the second leading cause of death in the United States, with an estimated 609,360 deaths and over 1.9 million new cases expected to be diagnosed in 2022. Cancer is one of the leading causes of death worldwide, accounting for approximately 10 million deaths and 19.3 million new cases in 2020 according to GLOBOCAN, the database of the International Association of Cancer Registries. The financial burden of cancer is enormous for patients, their families and society. The Agency for Healthcare Quality and Research estimates that the direct medical costs (total of all healthcare expenditures) for cancer in the United States in 2018 was $112.5 billion. The liver is often the life-limiting organ for cancer patients and cancer that spreads to the liver is one of the leading causes of cancer death. Cancer that begins in one area of the body often metastasizes to the liver. Patient prognosis is generally poor once cancer has spread to the liver. Consequently, cancers of the liver remain a major unmet medical need globally.

Liver Cancers—Incidence and Mortality

Cancers of the liver consist of primary liver cancer and metastatic liver cancer. Primary liver cancers (hepatocellular carcinoma, or HCC, and Intrahepatic Cholangiocarcinoma or ICC) originates in the liver or biliary tissue and is particularly prevalent in populations where the primary risk factors for the disease, such as hepatitis-B, hepatitis-C, high levels of alcohol consumption, aflatoxin, cigarette smoking and exposure to industrial pollutants, are present. Metastatic liver cancer, also called liver metastasis, or secondary liver cancer, results from the spread or "metastases" of a primary cancer into the liver. These metastases often continue to grow even after the primary cancer in another part of the body has been removed. Given the vital biological functions of the liver, including processing nutrients from food and filtering toxins from the blood, it is not uncommon for metastases to settle in the liver. In many cases patients die not as a result of their primary cancer, but from the tumors that metastasize to their liver. In the United States, metastatic liver disease is more prevalent than primary liver cancer.

The liver is a difficult organ to treat for certain cancers. Current liver treatment options include surgery, systemic drugs, and minimally invasive or liver directed options. Surgery options include surgical resections, liver transplants, and isolated hepatic perfusion. Systemic options include systemic chemotherapy and immunotherapy. Minimally invasive options include external beam radiation therapy and liver directed procedures. Liver directed (interventional oncology) procedures in the liver are performed by an interventional radiologist. These procedures include trans-arterial chemoembolization (TACE, DEBTACE) and Radioembolization (SIRT, TARE, or Y90). We believe that CHEMOSAT and HEPZATO, if approved in the United States, represent an important advancement in regional therapy for liver directed treatment of primary liver cancer and certain other cancers metastatic to the liver and are uniquely positioned to treat the entire liver either as a standalone therapy or as a complement to other therapies.

Ocular Melanoma

Ocular melanoma frequently metastasizes to the liver. Based on third party research that we commissioned in 2018, approximately 5,000-6,200 cases of ocular melanoma are diagnosed in the United States and Europe annually, and approximately 50% of these patients will develop metastatic disease. Of metastatic cases of ocular melanoma, approximately 90% of patients develop liver involvement. According to Lane et al., *JAMA Ophthalmol*. 2018 Sep 1;136(9):981-98, once ocular melanoma has spread to the liver, median overall survival for these patients is generally 3.9 months (untreated) to 6.3 months (treated). There is no one standard of care for patients with ocular melanoma liver metastases. Based on 2018 research, an estimated 2,500-3,100 patients with

ocular melanoma liver metastases in the United States, the United Kingdom and the EU may be eligible for treatment with HEPZATO annually. We estimate the annual addressable market for this indication in the United States, the United Kingdom and the EU is approximately $300 million per year.

Intrahepatic Cholangiocarcinoma

Primary liver cancers include HCC and ICC. According to GLOBOCAN 2020, an estimated 68,500 new cases of primary liver cancer are diagnosed in the United States and Europe annually. According to the ACS, approximately 41,260 new cases of these cancers are expected to be diagnosed in the United States in 2022, leading to approximately 30,520 deaths.

ICC is the second most common form of primary liver cancer and according to Wang et al., 2013 J Clin Oncol 31:1188-1195 accounts for 5-30% of primary liver cancers diagnosed in the United States and Europe annually. We believe that 90% of ICC patients are not candidates for surgical resection, and that approximately 20-30% of these may be candidates for certain focal interventions. According to third party research that we commissioned in 2018 we estimate that approximately 11,000 ICC patients in the United States, the United Kingdom and the EU annually could be candidates for treatment with HEPZATO and CHEMOSAT.

Colorectal Cancer

Colorectal cancer (CRC) is one of the most prevalent cancers in the United States and Europe and has a high metastatic rate to the liver. GLOBOCAN 2020 estimates 288,230 colorectal cancer diagnosis per year in the United States and Western Europe, UK, and Italy. According to the American Cancer Society, in the United States approximately 151,030 diagnoses are expected in 2022 leading to 52,580 deaths.

Recent advances in the treatment of primary colorectal cancer have shown encouraging increases in 5-year survival; however, the presence of metastasis is an indicator for increased mortality probability. Approximately 25% of patients will present with liver metastasis at the time of initial primary disease diagnosis. Clark et al., *J Gastrointest Oncol*. 2014;5(5):374-387. We estimate that approximately 98,000 CRC patients in the United States, the United Kingdom and the EU annually could be candidates for treatment with HEPZATO and CHEMOSAT.

Breast Cancer

Breast cancer (BC) is the most diagnosed cancer in women in the United States and worldwide. The American Cancer Society estimates that 287,850 women will be diagnosed with BC in the United States annually. BC is the second leading cancer-related cause of death for women (behind lung cancer) in the United States. GLOBOCAN 2020 estimates are that there are, annually, 726,259 women diagnosed with breast cancer in the United States, Western Europe and the United Kingdom. Recent advances in primary breast cancer treatments have given patients a high 5-year survival rate. The prognosis for patients with breast cancer liver metastasis, however, remains poor.

Approximately 18% of all women diagnosed with breast cancer will also have distant metastatic disease, in which 5% of these patients will have liver only metastasis. Eventually 50% of all metastatic patients will see their disease progress to the liver in addition to their initial diagnosed metastatic site and in 20% of these patient's liver progression is the cause of mortality. *Deipolyi AR, et al.J Vasc Inter Radiol. 2018;29(9):1226-1235.* Treatment options for patients with multiple sites of metastatic disease vary. We estimate that approximately 6,000 breast cancer patients with hepatic only involvement in the United States and Western Europe (including the United Kingdom and Italy) could be candidates for treatment with HEPZATO and CHEMOSAT. An additional 10,000 patients could receive benefits from HEPZATO and CHEMOSAT in the palliative setting based on local treatment guidelines.

Neuroendocrine Cancer

Neuroendocrine Tumors (NETs) or neuroendocrine neoplasia are a rare group of cancers that originate in neuroendocrine cells. NETs can originate anywhere in the body, the most common sites include the digestive tract, rectum, lungs, pancreas, or appendix. The American Society of Clinical Oncology (ASCO) estimates that there are 12,000 new diagnosis of neuroendocrine tumors each year in the United States, and a total of 21,500 in the United States and Europe.

According to *Pape et al. 2008. Endocrine-Related Cancer. 15(4), 1083-1097* NETs have a metastasis rate of between 60-80% and the majority of these accrue in the liver (85%). We estimate that approximately 12,000 NETs patients in the United States, the United Kingdom and the European Union each year could be candidates for treatment with HEPZATO and CHEMOSAT.

Pancreatic Cancer

Pancreatic adenocarcinoma comes with a poor prognosis for those diagnosed with the disease. The American Cancer Society estimates that pancreatic cancer will affect 62,210 patients annually, with 49,830 annual deaths in the United States in 2022. Along with GLOBOCAN estimates for Western Europe, the United Kingdom and Italy, pancreatic cancer effects a total of 132,442 patients annually with 105,638 annual deaths.

Upon diagnosis, nearly 75% of patients will have liver metastasis and 58% of those patients will have liver only metastasis. Metastatic pancreatic cancer proves to be a fast-progressing cancer that, once metastasized, leaves the patients limited treatment options. *Oweira, et al. World J Gastroenterol. 2017;23(10):1872-1880.* We estimate there are approximately 57,600 United States and Western Europe (including UK and Italy) new pancreatic cancer patients each year with hepatic only involvement. Given the rapid progression of the disease it is unknown at this time the estimated number of candidates for treatment with HEPZATO and CHEMOSAT.

About CHEMOSAT and HEPZATO

Our product administers concentrated regional chemotherapy to the liver. This “whole organ” therapy is performed by isolating the circulatory system of the liver, infusing the liver with a chemotherapeutic agent, and then filtering the blood prior to returning it to the patient’s circulatory system. During the procedure, known as percutaneous hepatic perfusion, PHP®, or PHP therapy, three catheters are placed percutaneously through standard interventional radiology techniques. The catheters temporarily isolate the liver from the body’s circulatory system, allow administration of the chemotherapeutic agent melphalan hydrochloride directly to the liver, and collect blood exiting the liver for filtration by our proprietary filters. The filters adsorb chemotherapeutic agent in the blood, thereby reducing systemic exposure to the drug and related toxic side effects before the filtered blood is returned to the patient’s circulatory system.

PHP therapy is performed in an interventional radiology suite in approximately two to three hours. Patients remain in an intensive care or step-down unit overnight for observation following the procedure. Treatment with CHEMOSAT and HEPZATO is repeatable, and a new disposable system is used for each treatment. Patients treated in clinical settings are permitted up to six treatments. In commercial treatment settings, patients have received up to eight treatments. In the United States, melphalan hydrochloride for injection will be included as part of the system, if approved. In Europe, the system is sold separately and used in conjunction with melphalan hydrochloride commercially available from a third party. In our clinical trials, melphalan hydrochloride for injection is provided to both European and United States clinical trial sites.

Early development of HEPZATO System—FDA Complete Response Letter

Based on clinical trials conducted using an earlier version of our HEPZATO system, in August 2012, we submitted an NDA under Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act, or FDCA, seeking FDA

approval for use of our HEPZATO system for the percutaneous intra-arterial administration of melphalan hydrochloride for use in the treatment of patients with metastatic melanoma in the liver and, subsequently, amended the application to ocular melanoma metastatic to the liver.

In the Spring of 2013, an Oncologic Drug Advisory Committee, or ODAC panel, convened by the FDA voted 16 to 0, with no abstentions, that the benefits of treatment with the early version of HEPZATO did not outweigh the risks associated with the procedure. A significant portion of FDA's presentation to the ODAC panel was focused on the FDA's assessment of treatment-related risks, including the analysis of treatment-related deaths that occurred during clinical trials. The FDA also expressed concerns about hypotension, or low blood pressure, during the procedure, length of hospital stay, as well as risks of stroke, heart attack, renal failure, and bone marrow suppression.

In September 2013, the FDA issued a complete response letter, or CRL, relating to our NDA. The FDA issues a CRL after the review of an NDA has been completed and questions remain that preclude approval of the NDA in its current form. The deficiencies identified in the CRL included, among other items, the requirement that we conduct an adequate and well-controlled study demonstrating substantial evidence that the effectiveness of the kit the Company intended to market outweighed its risks. The CRL also required that we address certain clinical, clinical pharmacology, human factors and product quality elements.

In January 2016, we entered into a Special Protocol Assessment agreement, or SPA, with the FDA on the design of a new Phase 3 clinical trial of HEPZATO to treat patients with hepatic dominant ocular melanoma. This SPA represented an agreement with the FDA that a specific Phase 3 trial would adequately address objectives that, if met, would support the submission for regulatory approval of HEPZATO. The SPA's primary endpoint was overall survival, and secondary endpoints included progression-free survival, overall response rate and quality-of-life measures. However, the Company faced significant difficulties, including the fact that the Best Alternative Care (BAC) arm was known to have limited efficacy, enrolling patients into the study under the SPA. Therefore, in the summer of 2018, we amended the protocol for the trial to a non-randomized, single-arm study with a different primary endpoint (objective response rate), which terminated the SPA.

Clinical Development Program

The focus of our clinical development program is to generate clinical data for CHEMOSAT and HEPZATO in various disease states to demonstrate efficacy and validate the safety profile of the current version of the product and treatment procedure. We believe that the improvements we have made to CHEMOSAT and HEPZATO and to the PHP therapy have addressed the adverse event profile and procedure-related risks that led to the issuance of the CRL. Our clinical development program is also designed to support clinical adoption of and reimbursement for CHEMOSAT in Europe, and to support regulatory filings and reimbursement in various jurisdictions, including the United States.

The FOCUS Trial

In July 2018, we commenced an amended clinical trial of HEPZATO, titled *A Single-arm, Multi-Center, Open-Label Study to Evaluate the Efficacy, Safety and Pharmacokinetics of HEPZATO Treatment in Patients with Hepatic-Dominant Ocular Melanoma*, or the FOCUS Trial. The rarity of ocular melanoma, absence of crossover to the experimental trial arm, competing clinical trials and the commercial availability of PHP® Therapy in Europe impeded enrollment in the original randomized protocol. Under the revised study protocol, the FOCUS Trial was to include a minimum of 80 treated patients with ocular melanoma metastatic to the liver. The primary endpoint of the FOCUS Trial was the objective response rate, or ORR, as measured by RECISTv1.1. Secondary endpoints included duration of response, disease control rate, overall survival, and progression-free survival. Additional exploratory outcome measures included time to objective response, hepatic progression-free survival, hepatic objective response, and quality of life, safety, and other pharmacokinetic measures. Patients previously

enrolled in the HEPZATO arm of the original trial were treated and statistically evaluated as part of the revised FOCUS Trial. The FOCUS Trial was conducted at 30 sites in the United States and Europe.

During much of 2019, enrollment of patients in the trial, entry of data into the clinical trial database and the pace at which we monitored data at our clinical trial was adversely affected by a lack of capital to fund the trial. While the funding constraints were alleviated in mid-2019, starting in early 2020 the COVID-19 pandemic further impacted our ability to enroll and treat patients in this trial and to monitor data at our clinical trial sites. Enrollment of the final patient occurred on October 2, 2020 and the final patient was treated in May 2021. On December 2, 2021, we released the final primary efficacy results of the FOCUS Trial. An Independent Review Committee (IRC) assessed an Overall Response Rate (ORR) of 31.4% [95% CI: 22.55 - 41.31] in the Intent to Treat (ITT) population, which exceeded the predefined success criteria (21%) for the primary ORR endpoint. Evaluable patients in the HEPZATO arm had a statistically significant improvement over BAC in the following pre-specified endpoints:

- ORR of 35.2%% [95% CI: 25.44 - 45.88] versus 12.5% [CI: 3.51 – 28.99] for the BAC arm (Chi-square P<0.05).
- Median Progression Free Survival (PFS) of 9.03 months [95% CI: 6.34 -11.56] versus 3.12 months [95% CI: 2.89 - 5.65] for the BAC arm (Chi-square p<0.001) (HR=0.39 p<0.001).
- Disease Control Rate of 73.6% [95% CI: 63.35 - 82.31] versus 37.5% [95% CI: 21.10 - 56.31] for patients in the BAC arm (p<0.002).

We plan to request a pre-NDA meeting with the FDA and, pending feedback from FDA and the pace of complete data analysis from our clinical sites which have been impacted by the COVID-19 pandemic, we plan to submit the NDA by mid-2022.

Recent Data Presentations

In January 2022, the results from a single-institution retrospective study conducted by University Hospital Southampton, Southampton UK on the use of the CHEMOSAT Hepatic Delivery System to treat patients with metastatic ocular melanoma with liver metastases were published in the journal Melanoma Research. With 81 patients and 250 procedures this is the largest single center percutaneous hepatic perfusion study to date. The study titled *Chemosaturation with Percutaneous Hepatic Perfusion for Metastatic Uveal Melanoma*, by Sachin Modi, MD FRCR(IR), et al, evaluated the safety and efficacy of PHP therapy in 81 patients with unresectable liver dominant metastases from ocular melanoma treated with CHEMOSAT. 50.6% of patients had prior treatments for metastatic uveal melanoma.

Average time from diagnosis of liver metastasis to first PHP was 5.3 months (158 days). The 81 patients underwent a total of 250 PHP treatments. The median number of treatments per patient was three. Tumor response was evaluated using Response Evaluation Criteria in Solid Tumors and adverse events were evaluated using Common Criteria for Adverse Events.

Results of the study in the 81 evaluable patients showed that 7 patients (8.6%) had a complete response, 42 patients (51.9%) had a partial response, 16 patients (19.8%) had stable disease, and 16 patients (19.8%) had progressive disease for a disease control rate of 80.2%. Median progression free survival (PFS) after the first treatment was 8.4 months. Median overall survival (OS) was 14.9 months.

Safety analysis showed that in 23 patients there were a total of 43 grade 3 (29) or grade 4 (14) treatment-related adverse events. There were no grade 5 treatment-related adverse events. Investigators concluded that PHP provides excellent response rates for patients and side effects are reduced with treatment team experience.

Market Access and Commercial Clinical Adoption

Europe

Since launching CHEMOSAT in Europe, over 1,200 commercial treatments have been performed at over 25 European cancer centers. Physicians in Europe have used CHEMOSAT to treat patients with a variety of cancers in the liver, primarily ocular melanoma liver metastases, and other tumor types, including cutaneous melanoma, hepatocellular carcinoma, cholangiocarcinoma, and liver metastases from colorectal cancer, breast, pancreatic and neuroendocrine.

In December 2018, the Company's wholly-owned subsidiary, Delcath Systems Ltd., entered into a license agreement with medac GmbH, for the commercialization of CHEMOSAT in Europe. The medac license provided to medac the exclusive right to market and sell CHEMOSAT in all member states of the EU, Norway, Liechtenstein, Switzerland, and the United Kingdom. The medac license provided to Delcath a combination of upfront and success-based milestone payments as well as a fixed transfer price per unit of CHEMOSAT and specified royalties.

In April 2021, we issued medac an invoice for €1 million for a milestone payment under the license agreement. medac disputed the invoice and, in response, on October 12, 2021, we notified medac that we were terminating the license agreement effective April 12, 2022. In response to medac's continued failure to pay the milestone and its demand for us to withdraw the termination notice, on December 16, 2021, we initiated an arbitration proceeding pursuant to the license agreement's dispute resolution procedures. On December 30, 2021, we received a letter from medac stating that, due to our failure to withdraw the termination notice, medac was terminating the license agreement with immediate effect. In the letter, medac reserved its rights in full, including a purported claim for damages for wrongful termination. In a separate letter, medac agreed to work with us to arrange an orderly transition in order to minimize the impact of any termination on patients and physicians. As of March 1, 2022, this transition has been completed and we have assumed direct responsibility for sales, marketing and distribution of CHEMOSAT in Europe.

The arbitration proceeding is moving forward with the parties agreeing to stay the arbitration for a finite period to pursue settlement discussions.

European Reimbursement

A critical driver of utilization growth for CHEMOSAT in Europe is the expansion of reimbursement mechanisms for the procedure in our priority markets. In most European countries, the government provides healthcare and controls reimbursement levels. Since the EU has no jurisdiction over patient reimbursement or pricing matters in its member states, the methodologies for determining reimbursement rates and the actual rates may vary by country. Reimbursement is administered on a regional and national basis. Medical devices are typically reimbursed under Diagnosis Related Groups, or DRG, as part of a procedure. Prior to obtaining permanent DRG reimbursement codes, in certain jurisdictions, we are actively seeking interim reimbursement from existing mechanisms that include specific interim reimbursement schemes, new technology payment programs as well as existing DRG codes. Currently we have an interim level of reimbursement in Germany.

In addition, on February 28, 2022, CHEMOSAT received Medical Device Regulation certification under the European Medical Devices Regulation [2017/745/EU], which may be considered by jurisdictions when evaluating reimbursement.

The release of the clinical study report from the FOCUS Trial later this year, will create the opportunity to apply for National Level reimbursement in each European country in regard to metastatic Ocular Melanoma (mOM). These applications must be made by us on a country-by-country level basis, with priority placed on markets where CHEMOSAT is currently used. The results from the Focus Trial should also support existing reimbursement mechanisms, such as Germany, allowing more hospital centers to secure funding to utilize CHEMOSAT. This increased level of evidence will ultimately support securing full funding for the treatment under DRG codes.

As of March 1, 2022, reimbursement applications in priority European markets will be handled directly by the Company. CHEMOSAT is approved for reimbursement in the United Kingdom and Germany.

Government Regulation

Our products are subject to extensive and rigorous government regulation by foreign regulatory agencies and the FDA. Foreign regulatory agencies, the FDA and comparable regulatory agencies in state and local jurisdictions impose extensive requirements upon the clinical development, pre-market clearance and approval, manufacturing, labeling, marketing, advertising and promotion, pricing, storage, and distribution of pharmaceutical and medical device products. Failure to comply with applicable foreign regulatory agency or FDA requirements may result in Warning Letters, fines, civil or criminal penalties, suspension, or delays in clinical development, recall or seizure of products, partial or total suspension of production or withdrawal of a product from the market.

United States Regulatory Environment

In the United States, the FDA regulates drug and device products under the FDCA, and its implementing regulations. HEPZATO is subject to regulation as a combination product, which means it is composed of both a drug product and device product. If marketed individually, each component would therefore be subject to different regulatory pathways and reviewed by different centers within the FDA. A combination product, however, is assigned to a center that will have primary jurisdiction over its pre-market review and regulation based on a determination of its primary mode of action, which is the single mode of action that provides the most important therapeutic action. In the case of HEPZATO, the primary mode of action is attributable to the drug component of the product, which means that the Center for Drug Evaluation and Research, has primary jurisdiction over its pre-market development and review.

The process required by the FDA before drug product candidates may be marketed in the United States generally involves the following:

- submission to the FDA of an IND, which must become effective before human clinical trials may begin and must be updated periodically, but at least annually;
- completion of extensive preclinical laboratory tests and preclinical animal studies, all performed in accordance with the FDA's good laboratory practice, or GLP, regulations;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the product candidate for each proposed indication;
- submission to the FDA of an NDA after completion of all pivotal clinical trials;
- a determination by the FDA within 60 days of its receipt of an NDA to file the NDA for review;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facilities at which the product is produced and tested to assess compliance with current good manufacturing practice, or cGMP, regulations; and
- FDA review and approval of an NDA prior to any commercial marketing or sale of the drug in the United States.

The development and approval process requires substantial time, effort and financial resources, and we cannot be certain that any approvals for our product will be granted on a timely basis, if at all.

The results of preclinical tests (which include laboratory evaluation as well as GLP studies to evaluate toxicity in animals) for a particular product candidate, together with related manufacturing information and analytical data,

are submitted as part of an IND to the FDA. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises concerns or questions about the conduct of the proposed clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. IND submissions may not result in FDA authorization to commence a clinical trial. A separate submission to an existing IND must also be made for each successive clinical trial conducted during product development. Further, an independent institutional review board, or IRB, for each medical center proposing to conduct the clinical trial must review and approve the plan for any clinical trial before it commences at that center, and it must monitor the study until completed. The FDA, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk. Clinical testing also must satisfy extensive good clinical practice regulations and regulations for informed consent and privacy of individually identifiable information. Similar requirements to the United States IND are required in the EU and other jurisdictions in which we may conduct clinical trials.

Clinical Trials

For purposes of NDA submission and approval, clinical trials are typically conducted in the following sequential phases, which may overlap:

- Phase 1 Clinical Trials. Studies are initially conducted in a limited population to test the product candidate for safety, dose tolerance, absorption, distribution, metabolism, and excretion, typically in healthy humans, but in some cases in patients.
- Phase 2 Clinical Trials. Studies are generally conducted in a limited patient population to identify possible adverse effects and safety risks, explore the initial efficacy of the product for specific targeted indications and to determine dose range or pharmacodynamics. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more expensive Phase 3 clinical trials.
- Phase 3 Clinical Trials. These are commonly referred to as pivotal studies. When Phase 2 evaluations demonstrate that a dose range of the product is effective and has an acceptable safety profile, Phase 3 clinical trials are undertaken in large patient populations to further evaluate dosage, provide substantial evidence of clinical efficacy and further test for safety in an expanded and diverse patient population at multiple, geographically dispersed clinical trial centers.
- Phase 4 Clinical Trials. The FDA may approve an NDA for a product candidate but require that the sponsor conduct additional clinical trials to further assess the drug after NDA approval under a post-approval commitment. In addition, a sponsor may decide to conduct additional clinical trials after the FDA has approved an NDA. Post-approval trials are typically referred to as Phase 4 clinical trials.

Sponsors of clinical trials may submit proposals for the design, execution, and analysis for their pivotal trials under a Special Protocol Assessment, or SPA. A SPA is an evaluation by the FDA of a protocol with the goal of reaching an agreement that the Phase 3 trial protocol design, clinical endpoints, and statistical analyses are acceptable to support regulatory approval of the drug product candidate with respect to effectiveness for the indication studied. Under a SPA, the FDA agrees to not later alter its position with respect to adequacy of the design, execution or analyses of the clinical trial intended to form the primary basis of an effectiveness claim in an NDA, without the sponsor's agreement, unless the FDA identifies a substantial scientific issue essential to determining the safety or efficacy of the drug after testing begins.

New Drug Applications

The results of drug development, preclinical studies and clinical trials are submitted to the FDA as part of an NDA. NDAs also must contain extensive chemistry, manufacturing, and control information. An NDA must be accompanied by a significant user fee, which may be waived in certain circumstances. Once the submission has

been accepted for filing, the FDA's goal is to review applications within ten months of submission or, if the application relates to an unmet medical need in a serious or life-threatening indication, six months from submission. The review process is often significantly extended by FDA requests for additional information or clarification. The FDA may refer the application to an advisory committee for review, evaluation, and recommendation as to whether the application should be approved. For new oncology products, the FDA will often solicit an opinion from an Oncology Drug Advisory Committee, a panel of expert authorities knowledgeable in the fields of general oncology, pediatric oncology, hematologic oncology, immunologic oncology, biostatistics, and other related professions. The ODAC panel reviews and evaluates data concerning the safety and effectiveness of marketed and investigational human drug products for use in the treatment of cancer and makes appropriate recommendations to the Commissioner of Food and Drugs. The FDA is not bound by the recommendation of an advisory committee. The FDA may deny approval of an NDA by issuing a Complete Response Letter, or CRL, if the applicable regulatory criteria are not satisfied. A CRL may require additional clinical data and/or an additional pivotal Phase 3 clinical trial(s), and/or other significant, expensive, and time-consuming requirements related to clinical trials, preclinical studies, or manufacturing. Data from clinical trials are not always conclusive and the FDA may interpret data differently than the applicant or its collaborators interpret data. Approval may be contingent on a Risk Evaluation and Mitigation Strategy, or REMS, that limits the labeling, distribution, or promotion of a drug product. Once issued, the FDA may withdraw product approval if ongoing regulatory requirements are not met or if safety problems occur after the product reaches the market. In addition, the FDA may require testing, including Phase IV clinical trials, and surveillance programs to monitor the safety effects of approved products which have been commercialized, and the FDA has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs or other information.

There are three primary regulatory pathways for a New Drug Application under Section 505 of the FDCA: Section 505 (b)(1), Section 505 (b)(2) and Section 505(j). A Section 505 (b)(1) application is used for approval of a new drug (for clinical use) whose active ingredients have not been previously approved. A Section 505 (b)(2) application is used for a new drug that relies on data not developed by the applicant. Section 505(b)(2) of the FDCA was enacted as part of the Drug Price Competition and Patent Term Restoration Act of 1984, also known as the Hatch-Waxman Act. This statutory provision permits the approval of an NDA where at least some of the information required for approval comes from studies not conducted by or for the applicant and for which the applicant has not obtained a right of reference. The Hatch-Waxman Act permits the applicant to rely, in part, upon the FDA's findings of safety and effectiveness for previously approved products. Section 505(j) application, also known as an abbreviated NDA, is used for a generic version of a drug that has already been approved.

Orphan Drug Exclusivity

Some jurisdictions, including the United States, may designate drugs for relatively small patient populations as orphan drugs. Pursuant to the U.S. Orphan Drug Act, the FDA grants orphan drug designation to drugs intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States. The orphan designation is granted for a combination of a drug entity and an indication and, therefore, it can be granted for an existing drug with a new (orphan) indication. Applications are made to the Office of Orphan Products Development at the FDA and a decision or request for more information is rendered in 60 days. NDAs for designated orphan drugs are exempt from user fees, obtain additional clinical protocol assistance, are eligible for tax credits up to 50% of research and development costs, and are granted a seven-year period of exclusivity upon approval. The FDA cannot approve the same drug for the same condition during this period of exclusivity, except in certain circumstances where a new product demonstrates superiority to the original treatment. Exclusivity begins on the date that the marketing application is approved by the FDA for the designated orphan drug, and an orphan designation does not limit the use of that drug in other applications outside the approved designation in either a commercial or investigational setting.

We have received five orphan drug designations for melphalan in the following indications:

- the treatment of patients with cutaneous melanoma;
- the treatment of patients with ocular melanoma;
- the treatment of patients with neuroendocrine tumors;
- the treatment of patients with primary liver cancer, or HCC; and
- the treatment of cholangiocarcinoma, which includes ICC.

We have received one orphan drug designation for doxorubicin for the treatment of patients with primary liver cancer, or HCC.

The granting of orphan drug designations does not mean that the FDA has approved a new drug. Companies seeking new drug approval must still pursue the rigorous development and approval process that requires substantial time, effort, and financial resources. Accordingly, although we have received these orphan drug designations, we cannot be certain that any approvals for our product will be granted at all, or on a timely basis.

Other Regulatory Requirements

Products manufactured or distributed pursuant to FDA approvals are subject to continuing regulation by the FDA, including recordkeeping, annual product quality review and reporting requirements. Adverse event experience with the product must be reported to the FDA in a timely fashion and pharmacovigilance programs to proactively look for these adverse events are mandated by the FDA. Drug manufacturers and their subcontractors must register their establishments with the FDA and certain state agencies and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMPs, which impose certain procedural and documentation requirements upon drug manufacturers. Following such inspections, the FDA may issue notices on Form 483 and Untitled Letters or Warning Letters that could require the drug manufacturer to modify certain activities. A Form 483 Notice, if issued at the conclusion of an FDA inspection, can list conditions the FDA investigators believe may have violated cGMP or other FDA regulations or guidelines. In addition to Form 483 Notices and Untitled Letters or Warning Letters, failure to comply with the statutory and regulatory requirements can subject a drug manufacturer to possible legal or regulatory action, such as suspension of manufacturing, seizure of product, injunctive action or possible civil penalties. We cannot be certain that we or our present or future third-party manufacturers or suppliers will be able to comply with the cGMP regulations and other ongoing FDA regulatory requirements.

If we or our present or future third-party manufacturers or suppliers are not able to comply with these requirements, the FDA may require us to recall our products from distribution or withdraw any potential approvals of an NDA for that product.

The FDA closely regulates the post-approval marketing and promotion of drugs, including standards and regulations for direct-to-consumer advertising, dissemination of off-label information, industry-sponsored scientific and educational activities and promotional activities involving the Internet. Drugs may be marketed only for the approved indications and in accordance with the provisions of the approved label. Further, any drug modifications, including changes in indications, labeling, or manufacturing processes or facilities, may require a submission to the FDA for its approval of a new or supplemental NDA, which may require the development of additional data or the conduct of additional preclinical studies and clinical trials. Failure to comply with these requirements can result in adverse publicity, Warning Letters, corrective advertising, and potential civil and criminal penalties.

Physicians may prescribe legally available products for uses that are not described in the product's labeling and that differ from those that have been tested by the drug manufacturer and approved by the FDA. Such off-label

uses are common across medical specialties, in particular in oncology. Physicians may believe that such off-label uses are the best treatment for many patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, impose stringent restrictions on manufacturers' communications regarding off-label use.

European Regulatory Environment

In the EU, the CHEMOSAT system is subject to regulation as a medical device. The EU is composed of the 27 Member States of the EU plus Norway, Iceland, and Liechtenstein. Under the EU Medical Device Directive (Directive No 93/42/EEC of 14 June 1993), as last amended, drug delivery products such as the CHEMOSAT system are governed by the EU laws on pharmaceutical products only if they are (i) placed on the market in such a way that the device and the pharmaceutical product form a single integral unit which is intended exclusively for use in the given combination, and (ii) the product is not reusable. In such cases, the drug delivery product is governed by the EU Code on Medicinal Products for Human Use (Directive 2001/83/EC, as last amended), while the essential requirements of the EU Medical Device Directive apply to the safety and performance-related device features of the product. Because we do not intend to place the CHEMOSAT system on the EU market as a single integral unit with melphalan, the product has been governed solely by the EU Medical Device Directive, while the separately marketed drug is governed by the EU Code relating to Medicinal Products for Human Use and other EU legislation applicable to drugs for human use.

In order to commercialize a medical device in the EU, we must comply with the essential requirements of the EU Medical Device Directive and more recently, the EU Medical Device Regulation. Compliance with these requirements entitles a manufacturer to affix a CE conformity mark, without which the products cannot be commercialized in the EU. To demonstrate compliance with the essential requirements and obtain the right to affix the CE conformity mark, medical device manufacturers must undergo a conformity assessment procedure, which varies according to the type of medical device and its classification. In April 2011, we obtained authorization to affix a CE Mark for the Generation One CHEMOSAT system and began European commercialization with this version of the CHEMOSAT system in early 2012. In April 2012, the Company obtained authorization to affix a CE Mark for the Generation Two CHEMOSAT system, and since this time all procedures in Europe have been performed with this version of the system.

The EU Medical Device Directive establishes a classification system placing devices into Class I, IIa, IIb, or III, depending on the risks and characteristics of the medical device. For certain types of low-risk medical devices (i.e., Class I devices which are non-sterile and do not have a measuring function), the manufacturer may issue an EC Declaration of Conformity based on a self-assessment of the conformity of its products with the essential requirements of the EU Medical Device Directives. Other devices are subject to a conformity assessment procedure requiring the intervention of a Notified Body, which is an organization designated by a Member State of the EU to conduct conformity assessments. Under the EU Medical Device Directive, CHEMOSAT has been regulated as a Class IIb medical device and, as such, the Notified Body was not required to carry out an examination of the product's design dossier as part of its conformity assessment prior to commercialization. The Company must comply with the essential requirements of the EU Medical Device Directive and, more recently, the EU Medical Device Regulation, and is subject to a conformity assessment procedure requiring the intervention of a Notified Body. The conformity assessment procedure for Class IIb medical devices requires the manufacturer to apply for the assessment of its quality system for the design, manufacture and inspection of its medical devices by a Notified Body. The Notified Body will audit the system to determine whether it conforms to the provisions of the EU Medical Device Directive. If the Notified Body's assessment is favorable, it will issue a Full Quality Assurance Certificate, which enables the manufacturer to draw a Declaration of Conformity and affix the CE mark to the medical devices covered by the assessment. Thereafter, the Notified Body will carry out periodic audits to ensure that the approved quality system is applied by the manufacturer.

A manufacturer without a registered place of business in a Member State of the EU that places a medical device on the market under its own name must designate an authorized representative established in the EU who can act

before, and be addressed by, a Competent Authority on the manufacturer's behalf with regard to the manufacturer's obligations under the EU Medical Device Directive and, more recently, the EU Medical Device Regulation. The Company's wholly-owned subsidiary, Delcath Systems Ltd. located in Galway, Ireland, serves as the authorized representative of the Company.

The European Commission undertook a review of the EU Medical Device Directive legislative framework and promulgated REGULATION (EU) 2017/745 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC. This new EU Medical Device Regulation became effective on May 25, 2017, marking the start of a 3-year transition period for manufacturers selling medical device in Europe to comply with the new EU Medical Device Regulation, which governs all facets of medical devices. The transition task is highly complex and touches every aspect of product development, manufacturing production, distribution and post marketing evaluation. Due to COVID-related delays experienced by the medical device industry and Notified Bodies (NB) alike, on April 17, 2020, the European Parliament adopted the European Commission's proposal to postpone the implementation of the EU Medical Device Regulation (EU) 2017/745 by 12 months or until May 26, 2021. Delcath did not achieve EU Medical Device Regulation certification by that date due to COVID-related delays; however, our CE Mark under the EU Medical Device Directive remained effective and allowed us to fully operate in Europe.

On February 28, 2022, CHEMOSAT received medical device certification under the new EU Medical Device Regulation, which replaced CHEMOSAT's prior certification under the EU Medical Device Directive. Achieving EU Medical Device Regulation certification entails a detailed evaluation from a designated EU Notified Body, including an audit of quality systems and a review of documentation supporting safety and performance claims for the device. The EU Medical Device Regulation greatly expands upon existing EU Medical Device Directive requirements, including the level of clinical evidence supporting claims, post-marketing surveillance, database traceability, unique device identification (UDI) and increased supply chain oversight. Under the EU Medical Device Regulation, CHEMOSAT's designation has changed from a Class IIb to a Class III medical device.

In the EU, we must also comply with the Medical Device Vigilance System, which is designed to improve the protection of health and safety of patients, users, and others by reducing the likelihood of recurrence of incidents related to the use of a medical device. Under this system, incidents are defined as any malfunction or deterioration in the characteristics and/or performance of a device, as well as any inadequacy in the labeling or the instructions for use which, directly or indirectly, might lead to or might have led to the death of a patient, user or other persons or to a serious deterioration in their state of health. When a medical device is suspected to be a contributory cause of an incident, its manufacturer or authorized representative in the EU must report it to the Competent Authority of the Member State where the incident occurred. Incidents are generally investigated by the manufacturer. The manufacturer's investigation is monitored by the Competent Authority, which may intervene, or initiate an independent investigation if considered appropriate. An investigation may conclude in the adoption of a Field Safety Corrective Action, or FSCA. An FSCA is an action taken by a manufacturer to reduce a risk of death or serious deterioration in the state of health associated with the use of a medical device that is already placed on the market. An FSCA may include device recall, modification exchange and destruction.

The manufacturer or its authorized representative must notify its customers and/or the end users of the medical device of the FSCA via a Field Safety Notice.

In the EU, the off-label promotion of a pharmaceutical product is strictly prohibited under the EU Community Code on Medicinal Products, which provides that all information provided within the context of the promotion of a drug must comply with the information contained in its approved summary of product characteristics. Our product instructions and indication reference the chemotherapeutic agent melphalan hydrochloride. However, no melphalan labels in the EU reference our product, and the labels vary from country to country with respect to the approved indication of the drug and its mode of administration. In the exercise of their professional judgment in the practice of medicine, physicians are generally allowed, under certain conditions, to use or prescribe a product

in ways not approved by regulatory authorities. Physicians intending to use our device must obtain melphalan separately for use with the CHEMOSAT system and must use melphalan independently at their discretion.

In the EU, the advertising and promotion of our products is also subject to EU Member States laws implementing the EU Medical Device Directive, Directive 2006/114/EC concerning misleading and comparative advertising and Directive 2005/29/EC on unfair commercial practices, as well as other EU Member State legislation governing the advertising and promotion of medical devices. These laws may further limit or restrict the advertising and promotion of our products to the general public and may also impose limitations on our promotional activities with health care professionals.

Failure to comply with the EU Member State laws implementing the Medical Device Directive and, more recently, the EU Medical Device Regulation, with the EU and EU Member State laws on the promotion of medicinal products or with other applicable regulatory requirements can result in enforcement action by the EU Member State authorities, which may include any of the following: fines, imprisonment, orders forfeiting products or prohibiting or suspending their supply to the market, or requiring the manufacturer to issue public warnings, or to conduct a product recall.

Other International Regulations

We continue to evaluate commercial opportunities in select markets when resources are available and at an appropriate time.

Intellectual Property

Our success depends in part on our ability to obtain patents and trademarks, maintain trade secret and know-how protection, enforce our proprietary rights against infringers, and operate without infringing on the proprietary rights of third parties. Because of the length of time and expense associated with developing new products and bringing them through the regulatory approval process, the health care industry places considerable emphasis on obtaining patent protection and maintaining trade secret protection for new technologies, products, processes, know-how, and methods. We hold rights in ten U.S. utility patents, one U.S. design patent, three pending U.S. utility patent applications, five issued foreign counterpart utility patents (including the validations of European Patents with claims directed to our filter and frame apparatus in 19 European countries, a European patent with claims directed to our filter apparatus and media in nine countries, and a European patent with claims to a kit of parts, directed to CHEMOSAT®, in 18 countries), six issued foreign counterpart design patents, and three pending foreign counterpart patent applications. Patents directed to our chemotherapy filtration system "Apparatus for Removing Chemotherapy Compounds from Blood" were issued by the United States Patent and Trademark Office in July 2017, October 2018, August 2019, February 2020, and February 2022. The patent issued in August 2019 has claims to a kit of parts capable of being assembled for delivering a small molecule chemotherapeutic agent to a subject. These claims are directed to HEPZATO™ KIT. The patent that issued in February 2020 has claims directed to our methods of treatment. In February 2019, a patent was issued by the United States Patent and Trademark Office with claims directed to a method of using our filter and frame apparatus and in August 2021 a patent was issued with claims directed to our filter and frame apparatus. A Hong Kong patent directed to our Filter and Frame Apparatus was issued in March 2018. A European patent was granted by the European Patent Office for our chemotherapy filtration apparatus in December 2018 and in July 2019 a European patent was granted by the European Patent Office with claims to a kit of parts, directed to CHEMOSAT®. A European patent directed to a method of using our filter and frame apparatus was granted in April 2019 by the European Patent Office. In August 2019, a European patent was granted by the European Patent Office with claims directed to our filter and frame apparatus and validated in eleven countries to provide additional European patent coverage for our filter and frame apparatus to the European patent directed to the frame apparatus that was granted in April 2017. When appropriate, we actively pursue protection of our proprietary products, technologies, processes, and methods by filing United States and international patent and trademark applications. We seek to pursue additional patent protection for technology invented through research

and development, manufacturing, and clinical use of CHEMOSAT and HEPZATO that will enable us to expand our patent portfolio around advances to our current systems, technology, and methods for our current applications as well as beyond the treatment of cancers in the liver.

There can be no assurance that the pending patent applications will result in the issuance of patents, that patents issued to or licensed by us will not be challenged or circumvented by competitors, or that these patents will be found to be valid or sufficiently broad to protect our technology or provide us with a competitive advantage.

To maintain our proprietary position, we also rely on trade secrets and proprietary technological experience to protect proprietary manufacturing processes, technology, and know-how relating to our business. We rely, in part, on confidentiality agreements with our marketing partners, employees, advisors, vendors and consultants to protect our trade secrets and proprietary technological expertise. In addition, we also seek to maintain our trade secrets through maintenance of the physical security of the premises where our trade secrets are located. There can be no assurance that these agreements will not be breached, that we will have adequate remedies for any breach, that others will not independently develop equivalent proprietary information or that third parties will not otherwise gain access to our trade secrets and proprietary knowledge.

In certain circumstances, United States patent law allows for the extension of a patent's duration for a period of up to five years after FDA approval. We intend to seek extension for one of our patents after FDA approval if it has not expired prior to the date of approval. In addition to our proprietary protections, the FDA has granted us six orphan drug designations that provide us a seven-year period of exclusive marketing beginning on the date that our NDA is approved by the FDA for the designated orphan drug. While the exclusivity only applies to the indication for which the drug has been approved, we believe that this exclusivity will provide us with added protection once commercialization of an orphan drug designated product begins. There has been and continues to be substantial litigation regarding patent and other intellectual property rights in the pharmaceutical and medical device areas. If a third party asserts a claim against us, we may be forced to expend significant time and money defending such actions and an adverse determination in any patent litigation could subject us to significant liabilities to third parties, require us to redesign our product, require us to seek licenses from third parties and, if licenses are not available, prevent us from manufacturing, selling, or using our product. Additionally, we plan to enforce our intellectual property rights vigorously and may find it necessary to initiate litigation to enforce our patent rights or to protect our trade secrets or know-how. Patent litigation can be costly and time consuming and there can be no assurance that the outcome will be favorable to us.

Competition

The healthcare industry is characterized by extensive research, rapid technological progress and significant competition from numerous healthcare companies and academic institutions. Competition in the cancer treatment industry is intense. We believe that the primary competitive factors for products addressing cancer include safety, efficacy, ease of use, reliability, price, and patient's quality of life. We also believe that physician relationships, especially relationships with leaders in the medical, surgical, and oncology communities, are important competitive factors. We also believe that the current global economic conditions and new healthcare reforms could put competitive pressure on us, including reduced selling prices and potential reimbursement rates, and overall procedure rates. Certain markets in Europe are experiencing the effects of continued economic weakness, which is affecting healthcare budgets and reimbursement.

CHEMOSAT competes and, if approved by the FDA, HEPZATO KIT™ will compete with all forms of liver cancer treatments, including surgery, systemic chemotherapy, focal therapies, and palliative care. In the disease states we are targeting there are also numerous clinical trials sponsored by third parties, which can compete for potential patients in the near term and may ultimately lead to new competitive therapies.

In January 2022, Immunocore Holdings plc announced FDA approval for KIMMTRAK (tebentafusp-tebn) for the treatment of HLA-A *02:01-positive adult patients with unresectable or metastatic uveal melanoma. This is

the first drug approved specifically for patients with metastatic uveal melanoma. HLA-A *02:01 patients represent approximately 45% of patients with uveal melanoma. Traditionally, metastatic uveal melanoma patients have been treated with a variety of local and regional techniques. There are numerous companies developing and marketing devices for the performance of focal therapies, including Boston Scientific Corporation, the Covidien Products division of Medtronic plc, Merit Medical Systems, Inc., Varian Medical Systems, Inc., Sirtex Medical Limited, AngioDynamics, Inc., and many others.

Gemcitabine plus cisplatin remains the standard of care for the treatment of ICC in patients who are not candidates for surgery.

Several therapies have been recently approved for unresectable or metastatic cutaneous melanoma, which may encompass liver metastases. Dabrafenib (Tafinlar™, GlaxoSmithKline plc), is indicated as a single agent for the treatment of patients with unresectable or metastatic melanoma with BRAF V600E mutation and in combination with trametinib in unresectable or metastatic melanoma with BRAF V600E or V600K mutations. Furthermore, trametinib (MEKINIST™, GlaxoSmithKline plc) is indicated as single agent (in addition to in combination with dabrafinib) for treatment of patients with unresectable or metastatic melanoma with BRAF V600E or V600K mutations. Previously approved melanoma therapies such as the biologic ipilimumab (Yervoy™, Bristol Myers Squibb Company) and the B-RAF targeted drug vemurafenib (Zelboraf™, Genentech, Inc.) may also make up the competitive landscape for the treatment of metastatic liver disease.

Many of these treatments are approved in Europe and other global markets.

Many of our competitors have substantially greater financial, technological, research and development, marketing, and personnel resources. In addition, some of our competitors have considerable experience in conducting clinical trials, regulatory, manufacturing and commercialization capabilities. Our competitors may develop alternative treatment methods, or achieve earlier product development, in which case the likelihood of us achieving meaningful revenues or profitability will be substantially reduced.

Manufacturing and Quality Assurance

We manufacture certain critical medical device components, including our proprietary filter media, and assemble and package CHEMOSAT and HEPZATO at our facility in Queensbury, New York. Our European headquarters and distribution facility in Galway, Ireland conducts final manufacturing, processing, and assembly. We use third parties to manufacture some components of CHEMOSAT and HEPZATO. CHEMOSAT and HEPZATO and its components must be manufactured and sterilized in accordance with approved manufacturing and pre-determined performance specifications. In addition, certain components will require sterilization prior to distribution, and we use third-party vendors to perform the sterilization process.

We are required to comply with the FDA's cGMP regulations and international quality system regulations, including those established by the International Standards Organization (ISO), with respect to products sold in the EU. We are required to maintain ISO 13485 certification for medical devices to be sold in the EU, which requires, among other items, an implemented quality system that applies to component quality, supplier control, product design and manufacturing operations. Our facilities are ISO 13485:2016 certified.

Human Capital Management

Our management team is comprised of highly experienced pharmaceutical and biotechnology executives with successful track records in researching, developing, gaining approval for and commercializing novel medicines to treat serious diseases. Each member of our management team has over 10 to 30 years of industry experience Additionally, the team has significant experience in capital raises, mergers/acquisitions, business development, and sales and marketing in the pharmaceutical industry. Our Board is constituted by individuals with significant

experience in the pharmaceutical and biotechnology industries. As of March 9, 2022, including our management team, we had approximately 55 full time employees, of which 45 are located in the United States and 10 are located in Europe. We intend to hire additional employees as and if funds allow. None of our employees are represented by a labor union or covered by a collective bargaining agreement, nor have we experienced any work stoppages. We believe our relationship with our employees is good.

As required, we also engage consultants to provide services to the Company, including quality assurance and corporate services.

We are committed to growing our business over the long-term and increasing value to our stockholders. We believe that our future success will depend, in part, on our continued ability to attract, hire and retain qualified personnel and to motivate such individuals to perform to the best of their abilities. As a result of the competitive nature of the industry in which we operate, employees have significant career mobility and competition for experienced employees is great. The existence of this competition, and our need for experienced and talented employees to achieve our business objectives, underlies the design and implementation of our compensation programs. At the same time, the Company seeks to keep its approach to compensation simple and streamlined. We provide our employees base salaries and leave and benefits programs that we believe are competitive and consistent with employee positions. In addition, we grant stock options to permanent employees, both upon initial hiring and thereafter, and pay cash bonuses to permanent employees based on the achievement of corporate and/or personal objectives.

We have developed corporate policies and guidelines for professional behavior. The Company policies and practices apply to all employees, regardless of title. These guidelines include our Code of Business Conduct and Ethics, policies for corporate disclosure, insider trading and whistle-blowers.

We value diversity of backgrounds and perspectives in our workforce and our policy is that we do not discriminate based on race, religion, creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, military and veteran status, sexual orientation or any other protected characteristic as established by federal, state or local laws.

We are committed to the health and safety of our employees, patients and other partners in the healthcare community. We work to promote an environment of awareness and shared responsibility for safety and regulatory compliance throughout our organization, in order to minimize risks of injury, exposure, or business impact.

During the COVID-19 pandemic, we have ceased all non-essential business travel and allowed our employees to work remotely where needed and if practicable to ensure the health and safety of our team members. In the recent months, some employees have transitioned back to working on-site in conjunction with the implementation of additional safety and infection prevention measures including enhanced cleaning and personal protective equipment. We continue to provide our employees with the option to work from home.

Available Information

Our website address is www.delcath.com. The information found on, or otherwise accessible through, our website is not incorporated by reference into, and does not form a part of, this Annual Report on Form 10-K or any other report or document we file with or furnish to the SEC. We make available, free of charge, on or through the SEC Filings section of our website, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to such reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. We have also posted on our website the Audit Committee Charter, the Compensation and Stock Option Committee Charter, the Nominating and Corporate Governance Committee Charter, the Code of Business Conduct and Ethics and Whistleblower Policy, which govern our directors, officers, and employees.

Item 1A. Risk Factors

An investment in our securities involve a high degree of risk. You should carefully consider the following risks, in conjunction with the financial and other information contained in this Annual Report on Form 10-K. As previously discussed, our actual results could differ materially from our forward-looking statements. These risks include those described below and may include additional risks and uncertainties not presently known to us or that we currently deem immaterial. If any of the events or circumstances described in the following risk factors occur, our business operations, performance, financial condition and prospects could be materially and adversely affected and the trading price of our common stock could decline, and you may lose all or part of your investment.

Risks Related to the COVID-19 Pandemic

The ongoing COVID-19 pandemic and the potential for future outbreak of other infectious or contagious diseases, could continue to harm and/or delay our research, development and commercialization efforts, increase our costs and materially and adversely affect our business.

The COVID-19 pandemic has had, and may continue to have, an impact on various aspects of our business and that of third parties on which we rely. There remains a high level of uncertainty due to the potential spread of new variants and surges in COVID-19 cases, and this could continue to harm and/or delay our research, development and commercialization efforts, increase our costs and have a material effect on our operations, including by impacting regulatory authorities' ability to review and/or inspect required facilities or submissions. In addition, the COVID-19 pandemic has impacted the global supply chain making it more difficult and/or impossible for us to obtain a sufficient supply of critical materials for our operations.

The COVID-19 pandemic has affected many countries, including the United States and several European countries, where we are currently conducting our FOCUS Trial. In response to the pandemic, hospitals participating in the trials in affected countries have taken a number of actions, including restricting elective and other procedures that are not deemed to be life-threatening, suspending clinical trial activities and limiting access to data monitoring. As a result, patients enrolled in our clinical trials have had the start of their treatments postponed and ongoing treatment regimens may be delayed. In addition, we do not have sufficient access to monitor trial data on a timely basis. These restrictions have had a materially adverse effect on our clinical operations.

The extent to which the COVID-19 pandemic may affect our clinical trial operations will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the duration of the outbreak, the spread and severity of new variants of COVID-19, and the effectiveness of governmental actions in response to the pandemic.

We expect that actions taken in response to the COVID-19 pandemic will also materially and adversely affect sales of CHEMOSAT. As noted above, some hospitals are restricting procedures that are not deemed to be life-threatening at this time. Because CHEMOSAT is not deemed to be an essential procedure, we expect that the number of procedures performed could decline. While we do not expect revenues from CHEMOSAT procedures to be material to us, a decrease in the number of procedures performed would adversely affect our expected revenues and our financial results.

These consequences of the COVID-19 pandemic will delay and could adversely affect our ability to obtain regulatory approval for and to commercialize our products, increase our operating expenses, and could have a material adverse effect on our financial results.

The extent to which the COVID-19 pandemic impacts our business will depend in part on future developments, which are uncertain and unpredictable in nature.

Risks Related to Our Business and Financial Condition

Our independent registered public accounting firm has expressed substantial doubt about our ability to continue as a going concern as of December 31, 2021.

Our independent registered public accounting firm issued a report dated March 30, 2022 in connection with the audit of our financial statements as of December 31, 2021, which included an explanatory paragraph describing the existence of conditions that raise substantial doubt about our ability to continue as a going concern. In addition, the notes to our financial statements for the year ended December 31, 2021, included in this Annual Report on Form 10-K, contain a disclosure describing the existence of conditions that raise substantial doubt about our ability to continue as a going concern. Our ability to continue as a going concern is dependent upon our ability to obtain substantial additional funding in connection with our continuing operations. Adequate additional financing may not be available to us on acceptable terms, or at all. If we are unable to raise additional capital and/or enter into strategic alliances when needed or on attractive terms, we would be forced to delay, reduce, or eliminate our research and development programs or any commercialization efforts. Our consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty. If we are not able to continue as a going concern, it is likely that holders of our common stock and holders of securities convertible into our common stock will lose all of their investment.

Drug development is an inherently uncertain process with a high risk of failure at every stage of development. We received a complete response letter from the FDA declining to approve our existing New Drug Application, or NDA, in its then current form.

Preclinical testing and clinical trials are long, expensive, and highly uncertain processes and failure can unexpectedly occur at any stage of clinical development. Drug development is very risky, and it takes several years to complete clinical trials. The start or end of a clinical trial is often delayed or halted due to changing regulatory requirements, manufacturing challenges, required clinical trial administrative actions, slower than anticipated patient enrollment, changing standards of care, availability, or prevalence of use of a comparator treatment or required prior therapy, clinical outcomes including insufficient efficacy, safety concerns, or our own financial constraints.

In response to our NDA, which we submitted to the FDA in August 2012 seeking approval for use of our HEPZATO Kit for the treatment of patients with ocular melanoma of the liver, in September 2013, the FDA denied approval of the NDA in its then current form and issued a complete response letter, or CRL. A CRL is issued by the FDA when the review of an NDA is completed, and deficiencies remain that preclude approval of the NDA in its current form. The deficiencies in the CRL included, but were not limited to, a statement that we must perform additional "well-controlled randomized trial(s) to establish the safety and efficacy of HEPZATO Kit using overall survival as the primary efficacy outcome measure" and which "demonstrates that the clinical benefits of HEPZATO Kit outweigh its risks." The FDA also required that the additional clinical trial(s) be conducted using the product we intend to market. Prior to conducting additional clinical trials, we were required to satisfy certain other requirements of the CRL, including, but not limited to, product quality testing, pre-clinical studies and human factors validation information.

We have initiated a pivotal Phase 3 trial in ocular melanoma metastases. We had a SPA agreement with the FDA for this study, which was initially designed as a randomized trial with a primary endpoint of overall survival. We subsequently amended the protocol so that the trial is a non-randomized, single-arm study with a primary endpoint of objective response rate. Although the changes to the protocol invalidated the SPA agreement, the FDA stated that it would not object to our conducting a study outside of a SPA agreement. However, we will need to justify how the results of the study support a favorable risk-benefit assessment, particularly whether the response rate is sufficient to overcome the toxicity of HEPZATO.

In addition, we conduct and participate in numerous clinical trials with a variety of study designs, patient populations and trial endpoints to support additional indications for HEPZATO with other drug therapies. In

2014, we initiated a Phase 2 clinical trial with HEPZATO for hepatocellular carcinoma, or HCC, in both the United States and Europe. In 2015, the Phase 2 clinical trial for HCC was expanded to include a cohort of patients with intrahepatic cholangiocarcinoma, a type of primary liver cancer, or ICC. The trial for this cohort was conducted at the same centers participating in the Phase 2 HCC trial. Unfavorable or inconsistent clinical data from clinical trials, including the Phase 2 clinical trial for HCC, the market's perception of these clinical data or FDA's perception of this clinical data, may adversely impact our ability to obtain approval, and our financial condition. Additionally, even if the results of our Phase 2 clinical trial for HCC are positive, there is a substantial risk that it will fail to have positive results in Phase 3 clinical trials with regard to efficacy, safety or other clinical outcomes and may never obtain regulatory approval.

The Company does not expect to generate significant revenue for the foreseeable future.

Our entire focus has been on developing, commercializing, and obtaining regulatory authorizations and approvals of CHEMOSAT and HEPZATO and we have only developed these products for the treatment of cancers in the liver. If CHEMOSAT and HEPZATO for the treatment of cancers in the liver fail as commercial products, we have no other products to sell. In addition, since CHEMOSAT currently is approved for commercialization solely in the European Union, or the EU, and limited other jurisdictions (including the United Kingdom), if we are unsuccessful in commercializing the product in the EU and/or if HEPZATO is not approved in the United States and elsewhere, we will have no means of generating revenue. Accordingly, we may not generate material revenues from product sales in the United States in the next several years, if at all. As a result, our revenue sources are, and will remain, extremely limited unless and until our product candidates are approved by the FDA or other additional foreign regulatory agencies and successfully marketed. CHEMOSAT and HEPZATO may not be successful in clinical trials, approved by the FDA or other additional foreign regulatory agency or marketed at any time in the foreseeable future or at all.

Continuing losses may exhaust our capital resources.

As of December 31, 2021, we had $27.0 million in cash and cash equivalents. We have had minimal revenue to date, and have a substantial accumulated deficit, recurring operating losses and negative cash flow. For the years ended December 31, 2021 and 2020, we incurred net losses of approximately $25.6 million and $24.2 million, respectively and expect to continue to incur losses in 2022. To date, we have funded operations through a combination of private placements and public offerings of our securities, including convertible notes. If we continue to incur losses, we may exhaust our capital resources, and as a result may be unable to complete our clinical trials, engage in product development and the regulatory approval process and commercialization of CHEMOSAT and HEPZATO or any other versions of these products. If we are unable to raise capital or generate sufficient revenue, we may not be able to pay our debts when they become due and may have to seek protection under federal bankruptcy law or enter into a receivership.

If we cannot raise additional capital, our potential to generate future revenues will be significantly limited since we may not be able to further commercialize CHEMOSAT and HEPZATO, complete our clinical trials or conduct future product development and clinical trials.

We will require additional substantial financing to complete our clinical trial program or seek other approvals, to conduct future development and clinical trials and to further commercialize our product in the EU and any other markets where we may receive approval for our products. If we are unable to raise additional capital, our ability to complete product development projects or clinical trials could be impaired. We do not know if additional financing will be available when needed at all or on acceptable terms. If we are unable to obtain additional financing as needed, we may not be able to further commercialize CHEMOSAT and HEPZATO, obtain regulatory approvals or complete our development projects or clinical trials, which would result in a complete loss of an investment in our securities.

Our liquidity and capital requirements will depend on numerous factors, including:

- clinical studies, including a Phase 3 clinical trial in ocular melanoma liver metastases;

- the timing and costs of our various United States and foreign regulatory filings, obtaining approvals and complying with regulations;
- the timing and costs associated with developing our manufacturing operations;
- the timing of product commercialization activities, including marketing and distribution arrangements overseas;
- executive compensation, including the cost of attracting and retaining a permanent CFO;
- the timing and costs involved in preparing, filing, prosecuting, defending and enforcing intellectual property rights; and
- the impact of competing technological and market developments.

Insufficient funds may require us to curtail or stop our commercialization activities, regulatory submissions or ongoing activities for regulatory approval, research and development and clinical trials, which will significantly limit our potential to generate future revenues.

Risks Related to FDA and Foreign Regulatory Approvals and Regulatory Matters

Our failure to obtain, or delays in obtaining, regulatory approvals may have a material adverse effect on our business, financial condition and results of operations.

HEPZATO is subject to extensive and rigorous government regulation by the FDA and CHEMOSAT by other foreign regulatory agencies. Failure to comply with FDA and other applicable regulatory requirements may, either before or after product approval, subject us to either civil or criminal administrative or judicially imposed sanctions and/or other penalties.

We are not permitted to market HEPZATO in the United States unless and until we obtain regulatory approval from the FDA. To market the product in the United States, we must submit to the FDA and obtain FDA approval of an NDA. The NDA must be supported by extensive clinical and preclinical data, as well as extensive information regarding chemistry, manufacturing and controls, or CMC, to demonstrate the safety and effectiveness of HEPZATO. The FDA and similar foreign authorities could delay, limit or deny approval of HEPZATO for various reasons, including because they may not deem the product to be adequately safe and effective. Furthermore, we cannot be certain that we or our present or future third-party manufacturers or suppliers will be able to comply with the cGMP regulations and other ongoing FDA regulatory requirements. If we or our present or future third-party manufacturers or suppliers are not able to comply with these requirements, the FDA may require us to withdraw any potential approvals of an NDA for HEPZATO.

Undesirable side effects caused by HEPZATO or any other product candidate that we develop could result in the denial of regulatory approval by the FDA or other regulatory authorities for any or all targeted indications or cause us to evaluate the future of our product development programs. The regulatory review and approval process is lengthy, expensive and inherently uncertain. As part of the U.S. Prescription Drug User Fee Act, the FDA has a goal to review and act on a percentage of all submissions in a given time frame. In August 2012, we submitted the HEPZATO NDA seeking an indication for ocular melanoma liver metastases and, in September 2013, the FDA declined to approve the NDA and issued a CRL. The deficiencies in the CRL included, but were not limited to, a statement that we must perform additional "well-controlled randomized trial(s) to establish the safety and efficacy of HEPZATO using overall survival as the primary efficacy outcome measure" and which "demonstrates that the clinical benefits of HEPZATO outweigh its risks." The FDA also requires that the additional clinical trial(s) be conducted using the product we intend to market. Prior to conducting additional clinical trials, we must satisfy certain other requirements of the CRL, including, but not limited to, product quality testing and human factors information. However, even if we complete these clinical trials and satisfy all

the requirements of the CRL, we may not obtain regulatory approval from the FDA. Continued failure to obtain, or additional delays in obtaining, regulatory approvals may:

- adversely affect the commercialization of the current version of CHEMOSAT and HEPZATO or any other products that we develop in the future;
- impose additional costs on us;
- diminish any competitive advantages that may be attained; and
- adversely affect our ability to generate revenues.

We have obtained the right to affix the CE Mark for the CHEMOSAT Hepatic Delivery System as a medical device for the delivery of melphalan. Since we may only promote the device within this specific indication, if physicians are unwilling to obtain melphalan separately for use with CHEMOSAT, our ability to commercialize CHEMOSAT in the EU will be significantly limited.

In the EU, CHEMOSAT is regulated as a Class III medical device indicated for the intra-arterial administration of a chemotherapeutic agent, melphalan hydrochloride, to the liver with additional extracorporeal filtration of the venous blood return. Our ability to market and promote CHEMOSAT is limited to this approved indication. To the extent that our promotion of CHEMOSAT is found to be outside the scope of its approved indication, we may be subject to fines or other regulatory action, limiting our ability to commercialize CHEMOSAT in the EU.

We are limited to marketing CHEMOSAT in the EU as a medical device for the delivery of melphalan. If physicians are unwilling to obtain melphalan separately for use with CHEMOSAT, our ability to commercialize CHEMOSAT in the EU will be significantly limited. Our product instructions and indication reference the chemotherapeutic agent melphalan. However, no melphalan labels in the EU reference our product, and the labels vary from country to country with respect to the approved indication of the drug and its mode of administration. As a result, the delivery of melphalan with our device may not be within the applicable label with respect to some indications in some Member States of the EU where the drugs are authorized for marketing. Physicians intending to use CHEMOSAT must obtain melphalan separately for use with CHEMOSAT and must use melphalan independently at their discretion. If physicians are unwilling to obtain melphalan separately from CHEMOSAT and/or to prescribe the use of melphalan independently, our sales opportunities in the EU will be significantly limited.

We are subject to significant ongoing regulatory obligations and oversight in the EU and will be subject to such obligations in the United States and any other country where we receive marketing authorization or approval.

In April 2012, we obtained the required certification from a designated EU Notified Body, enabling us to complete an EC Declaration of Conformity with the essential requirements of the EU Medical Device Directive and affix the CE Mark to the Generation Two version of CHEMOSAT. More recently, on February 28, 2022, we obtained Medical Device Regulation certification under the new European Medical Devices Regulation [2017/745/EU]. In order to maintain the right to affix the CE Mark in the EU, we are subject to compliance obligations, and any material changes to the approved product, such as manufacturing changes, product improvements or revised labeling, may require further regulatory review. Additionally, we are subject to ongoing audits by the European Notified Body, and the right to affix the CE Mark to the Generation Two version of CHEMOSAT may be withdrawn for a number of reasons, including the later discovery of previously unknown problems with the product.

To the extent that HEPZATO is approved by the FDA or CHEMOSAT by any other regulatory agency, we will be subject to similar ongoing regulatory obligations and oversight in those countries where approval is obtained. For example, we may be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or requirements for potentially costly post-marketing testing, including

Phase IV clinical trials, and surveillance to monitor the safety and efficacy of the product candidate. In addition, if the FDA approves a product candidate, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with current good manufacturing practice, or cGMPs, good clinical practices, or GCPs, and good laboratory practices, which are regulations and guidelines enforced by the FDA for all products in clinical development, for any pre-clinical or clinical trials that we conduct post-approval. In addition, post-marketing requirements for HEPZATO may include implementation of a risk evaluation and mitigation strategies, or REMS, program to ensure that the benefits of the product outweigh its risks. A typical REMS may include a medication guide, a patient package insert, a communication plan to healthcare professionals, restrictions on distribution or use and/or other elements to assure safe use of the product. However, our discussions with the FDA have indicated that a medication guide or communication plan will not be required.

Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- refusals or delays in the approval of applications or supplements to approved applications;
- refusal of a regulatory authority to review pending market approval applications or supplements to approved applications;
- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market or voluntary or mandatory product recalls or seizures;
- fines, FDA warning letters or untitled letters, or holds on clinical trials;
- import or export restrictions;
- injunctions or the imposition of civil or criminal penalties;
- restrictions on product administration, requirements for additional clinical trials or changes to product labeling or REMS programs; or
- recommendations by regulatory authorities against entering into governmental contracts with us.

If we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and may not achieve or sustain profitability, which would have a material adverse effect on our business, results of operations, financial condition and prospects.

The development and approval process in the United States could take many years, require substantial resources and may never lead to the approval of HEPZATO by the FDA for use in the United States.

We cannot sell or market HEPZATO with melphalan or other chemotherapeutic agents in the United States without prior FDA approval of an NDA for HEPZATO. Although melphalan and other drugs have been approved by the FDA for use as chemotherapeutic agents, regulatory approval is required in the United States for the combined medical device component and drug component and the specific indication, dose and route of administration of melphalan or other chemotherapeutic agents or compounds used in our system. We are seeking approval of HEPZATO for a substantially higher dose of melphalan than prior approved doses of melphalan and such other chemotherapeutic agents or other compounds. We must obtain separate regulatory approvals for HEPZATO with melphalan, and every other chemotherapeutic agent or other compound used with the system that we intend to market, and all the manufacturing facilities used to manufacture components or assemble our system must be inspected and meet legal requirements. Securing regulatory approval requires the submission of extensive pre-clinical and clinical data and other supporting information for each proposed therapeutic indication in order to establish to the FDA's satisfaction the product's safety, efficacy, potency and purity for each intended

use. The pre-clinical testing and clinical trials of HEPZATO with melphalan or any other chemotherapeutic agent or compound we use in its system must comply with the regulations of the FDA and other federal, state and local government authorities in the United States. Clinical development is a long, expensive and uncertain process and is subject to delays. We may encounter delays or rejections for various reasons. Moreover, approval policies or regulations may change. If we do not obtain and maintain regulatory approval for HEPZATO and the use of melphalan or other chemotherapeutic agents, our business, results of operations, financial condition and prospects would be materially and adversely affected.

In August 2012, we submitted an NDA seeking an indication for ocular melanoma liver metastases for HEPZATO. In September 2013, the FDA issued a CRL indicating that we must perform additional well-controlled randomized trial(s) to establish the safety and efficacy of HEPZATO using overall survival as the primary efficacy outcome measure and which demonstrates that the clinical benefits of HEPZATO outweigh its risks. Our current Phase 3 trial in ocular melanoma liver metastases, the FOCUS Trial, is not randomized and uses a different primary efficacy outcome measure. The FDA has stated that it would not object to our conducting a study outside of a SPA agreement. Failure to obtain FDA approval for HEPZATO will have a material adverse effect on our business, financial condition, and results of operations and prospects.

Even if we obtain regulatory approval for HEPZATO in the United States, our ability to market HEPZATO would be limited to those uses that are approved.

The FDA closely regulates the post-approval marketing and promotion of drugs, including standards and regulations for direct-to-consumer advertising, dissemination of off-label information, industry-sponsored scientific and educational activities and promotional activities involving the Internet. Drugs may be marketed only for the approved indications and in accordance with the provisions of the approved label. If the FDA approves an application for HEPZATO, our ability to market and promote HEPZATO would be limited to the approved indication, so even with FDA approval, HEPZATO may only be promoted in this limited market. Physicians may prescribe legally available drugs for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, impose stringent restrictions on manufacturers' communications regarding off-label use, and FDA approval may otherwise limit our sales practices and our ability to promote, sell and distribute the product. Thus, we may only market HEPZATO, if approved by the FDA, for its approved indication and could be subject to enforcement action for off-label marketing. Further, if there are any modifications to the product, including changes in indications, labeling or manufacturing processes or facilities, we may be required to submit and obtain FDA approval of a new or supplemental NDA, which may require us to develop additional data or conduct additional preclinical studies and clinical trials. Failure to comply with these requirements can result in adverse publicity, FDA warning letters, corrective advertising and potential civil and criminal penalties.

If future clinical trials are unsuccessful, significantly delayed or not completed, we may not be able to market HEPZATO for other indications.

The clinical trial data on our product is limited to specific types of liver cancer. In 2010, we concluded a Phase 3 clinical trial of HEPZATO with a prior version of the medical device and procedure in patients with metastatic ocular and cutaneous melanoma to the liver and also completed a multi-arm Phase 2 clinical trial of that same version of HEPZATO in patients with primary and metastatic melanoma stratified into four arms.

We have completed the dosing phase and analysis of the primary endpoint of an open-label Phase 3 clinical trial in ocular melanoma liver metastases called the FOCUS Trial.

It may take several years to complete the testing of HEPZATO for use in the treatment of this indication, and failure can occur at any stage of development, for many reasons, including:

- any pre-clinical or clinical test may fail to produce results satisfactory to the FDA or foreign regulatory authorities;

- pre-clinical or clinical data can be interpreted in different ways, which could delay, limit or prevent regulatory approval;
- negative or inconclusive results from a pre-clinical study or clinical trial or adverse medical events during a clinical trial could cause a pre-clinical study or clinical trial to be repeated or a program to be terminated, even if other studies or trials relating to the program are successful;
- the FDA or foreign regulatory authorities can place a clinical hold on a trial if, among other reasons, it finds that patients enrolled in the trial are or would be exposed to an unreasonable and significant risk of illness or injury;
- we may encounter delays or rejections based on changes in regulatory agency policies during the period in which we are developing a system, or the period required for review of any application for regulatory agency approval;
- although our FOCUS Trial is fully enrolled, enrollment in any other clinical trials may proceed more slowly than expected;
- our clinical trials may not demonstrate the safety and efficacy of any system or result in marketable products;
- the FDA or foreign regulatory authorities may request additional clinical trials, including an additional Phase 3 trial, relating to our NDA submissions;
- the FDA or a foreign regulatory authority may change its approval policies or adopt new regulations that may negatively affect or delay our ability to bring a system to market or require additional clinical trials; and
- a system may not be approved for all the requested indications.

The failure or delay of clinical trials could cause an increase in the cost of product development, delay filing of an application for marketing approval or cause us to cease the development of HEPZATO for other indications. If we are unable to develop HEPZATO for other indications, the future growth of our business could be negatively impacted. In addition, we have limited clinical data relating to the effectiveness of HEPZATO in certain types of cancer. Such limited data could slow the adoption of CHEMOSAT and HEPZATO and significantly reduce our ability to commercialize CHEMOSAT and HEPZATO.

We may not be able to obtain or maintain orphan drug designation or exclusivity for our product candidates.

The FDA has granted us six orphan drug designations and we may seek additional orphan drug designations in the future.

Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals in the United States.

Generally, if a product with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the European Medicines Agency, or EMA, from approving another marketing application for the same indication for that drug during that time period. The applicable period is seven years in the United States and ten years in Europe. The European exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified. Orphan drug exclusivity may be lost if the FDA or the EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition.

We cannot assure you that any future application for orphan drug designation with respect to any product candidate will be granted. If we are unable to obtain orphan drug designation in the United States, we will not be eligible to obtain the period of market exclusivity that could result from orphan drug designation or be afforded the financial incentives associated with orphan drug designation. Even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve the same drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care.

We rely on third parties to conduct certain elements of the clinical trials for CHEMOSAT and HEPZATO, and if they do not perform their obligations to us, we may not be able to obtain regulatory approvals for our system.

We design the clinical trials for our products, but rely on academic institutions, corporate partners, contract research organizations and other third parties to assist in managing, monitoring and otherwise carrying out these trials. We rely heavily on these parties for the execution of our clinical studies and control only certain aspects of their activities. Accordingly, we may have less control over the timing and other aspects of these clinical trials than if we conducted them entirely on our own. We rely on third parties to conduct monitoring and data collection of our ongoing and future clinical trials, including our Phase 3 ocular melanoma trial. Although we rely on these third parties to manage the data from these clinical trials, we are responsible for confirming that each of our clinical trials is conducted in accordance with our general investigational plan and protocol. Moreover, the FDA and foreign regulatory agencies require us to comply with GCPs for conducting, recording and reporting the results of clinical trials to assure that the data and results are credible and accurate and that the trial participants are adequately protected. The FDA enforces these GCP regulations through periodic inspections of trial sponsors, principal investigators and trial sites. Our reliance on third parties does not relieve us of these responsibilities and requirements and if we or the third parties upon whom we rely for our clinical trials fail to comply with the applicable GCPs, the data generated in our clinical trials may be deemed unreliable and the FDA or other foreign regulatory agencies may require us to perform additional trials before approving our marketing application. We cannot assure you that, upon inspection, the FDA will determine that any of our clinical trials comply or complied with GCPs. In addition, our clinical trials must be conducted with product that complies with the FDA's cGMP requirements. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process, and may result in a failure to obtain regulatory approval for HEPZATO if these requirements are not met.

Purchasers of CHEMOSAT in Europe may not receive third-party reimbursement or such reimbursement may be inadequate. Without adequate reimbursement, commercialization of CHEMOSAT in Europe may not be successful.

We have obtained the right to affix the CE Mark for CHEMOSAT, and we intend to seek third-party or government reimbursement within those countries in the Europe where we expect to market and sell CHEMOSAT. In Germany, we had received a ZE diagnostic-related group code, or ZE Code, which, beginning in 2016, permits hospitals in Germany to obtain reimbursement for CHEMOSAT procedures. Negotiations on the amount of reimbursement to be received under the ZE Code were concluded in 2016 and the procedure was reimbursed under the ZE Code in 2017. Reimbursement negotiations under the ZE system are conducted annually. Consequently, reimbursement obtained may not be for the full amount sought. In countries where we are able to obtain reimbursement, local policy could limit our ability to obtain adequate and consistent reimbursement and limit other sales opportunities in those countries.

In other countries, until we obtain government reimbursement, we will rely on private payors or local pre-approved funds where available. There are also no assurances that third-party payors or government health agencies in Europe will reimburse use of CHEMOSAT in the long term or at all. Further, each country has its own protocols regarding reimbursement, so successfully obtaining third party or government health agency

reimbursement in one country does not necessarily translate to similar reimbursement in another European country. Physicians, hospitals and other health care providers may be reluctant to purchase CHEMOSAT if they do not receive substantial reimbursement for the cost of using the product from third-party payors or government entities. The lack of adequate reimbursement may significantly limit sales opportunities in Europe.

The success of our products may be harmed if the government, private health insurers or other third-party payers do not provide sufficient coverage or reimbursement.

Our ability to commercialize CHEMOSAT and HEPZATO successfully will depend in part on the extent to which reimbursement for the costs of such products and related treatments will be available from government health administration authorities, private health insurers and other third-party payors. HEPZATO is currently not approved by the FDA. Medicare, Medicaid, private health insurance plans and their foreign equivalents will not reimburse the use of HEPZATO since the product is currently not approved for use in the United States. We will seek reimbursement by third-party payors of the cost of HEPZATO after its use is approved, but there are no assurances that adequate third-party coverage will be available to establish and maintain price levels sufficient for us to realize an appropriate return on our investment in developing new therapies. Government, private health insurers and other third-party payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement for new therapeutic products approved for marketing. Accordingly, even if coverage and reimbursement are provided by government, private health insurers and third-party payors for uses of our products, market acceptance of these products would be adversely affected if the reimbursement available proves to be unprofitable for healthcare providers.

Implementation of healthcare reforms in the United States and in significant overseas markets may limit the ability to commercialize CHEMOSAT and HEPZATO and the demand for CHEMOSAT and HEPZATO. Healthcare providers may respond to such cost-containment pressures by choosing lower cost products or other therapies. In March 2010, the Patient Protection and Affordable Care Act and Health Care and Education Reconciliation Act of 2010, or the ACA, was enacted in the United States. The ACA included a number of provisions aimed at improving quality and decreasing costs. The Trump administration took executive actions and eliminated the individual shared responsibility penalty portion of the ACA. A court decision finding the ACA to be unconstitutional was appealed to the U.S. Supreme Court. On June 21, 2021, the United States Supreme Court held in a 7-2 decision that the states and individuals that had previously challenged the constitutionality of the ACA's individual mandate lacked standing to challenge the law, thus ending the legal challenges to the ACA.

CHEMOSAT and HEPZATO may not achieve sufficient acceptance by the medical community to sustain our business.

The commercial success of CHEMOSAT and HEPZATO, if approved, will depend upon their acceptance by the medical community and third-party payers as clinically useful, cost effective and safe. Acceptance by the medical community may depend on the extent to which leaders in the scientific and medical communities publish scientific papers in reputable academic journals. If testing and clinical practice do not confirm the safety and efficacy of CHEMOSAT and HEPZATO or even if further testing and clinical practice produce positive results but the medical community does not view these favorably, our efforts to market CHEMOSAT and HEPZATO may fail, which would cause us to cease operation.

We may be subject, directly or indirectly, to federal and state health care fraud and abuse laws, false claims laws and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

If we obtain FDA approval for any of our drug candidates and begin commercializing those products in the United States, our operations will be directly, or indirectly through our customers, subject to various federal and state fraud and abuse laws. These laws may affect, among other things, our proposed sales, marketing and

education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, the purchase or recommendation of an item or service reimbursable under a federal health care program, such as Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid or other third-party payors that are false or fraudulent;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and its implementing regulations, which impose certain requirements relating to the privacy, security and transmission of individually identifiable health information;
- the federal transparency requirements under the Patient Protection and Affordable Care Act of 2010 requires manufacturers of drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests; and
- state law and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including exclusion from payment by federal health care programs, civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

Compliance with laws and regulations pertaining to the privacy and security of health information may be time consuming, difficult and costly, particularly in light of increased focus on privacy issues in countries around the world, including the United States and the European Union.

We are subject to various domestic and international privacy and security regulations. The confidentiality, collection, use and disclosure of personal data, including clinical trial patient-specific information, are subject to governmental regulation generally in the country where the personal data were collected or used. In the United States we are subject to various state and federal privacy and data security regulations, including but not limited to, HIPAA as amended by HITECH. HIPAA mandates, among other things, the adoption of uniform standards for the electronic exchange of information in common health care transactions, as well as standards relating to the privacy and security of individually identifiable health information, which require the adoption of administrative, physical and technical safeguards to protect such information. In the European Union, personal data includes any information that relates to an identified or identifiable natural person with health information carrying additional obligations, including obtaining the explicit consent from the individual for collection, use or disclosure of the information. In addition, we are subject to EU regulation with respect to protection of and cross-border transfers of such data out of the European Union, and this regulation became more stringent in May 2018 when the EU's General Data Protection Regulation (GDPR) came into effect. Furthermore, the legislative and regulatory landscape for privacy and data protection continues to evolve, and there has been an increasing

amount of focus on privacy and data protection issues. The United States and the European Union and its member states continue to issue new privacy and data protection rules and regulations that relate to personal data and health information.

Compliance with these laws may be time consuming, difficult and costly. If we fail to comply with applicable laws, regulations or duties relating to the use, privacy or security of personal data we could be subject to the imposition of significant civil and criminal penalties, be forced to alter our business practices and suffer reputational harm.

Changes in health care law and implementing regulations, including government restrictions on pricing and reimbursement, as well as health care policy and other health care payor cost-containment initiatives, may have a material adverse effect on us.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the health care system and efforts to control health care costs, including drug prices, that could have a significant negative impact on our business, including preventing, limiting or delaying regulatory approval of our drug candidates and reducing the sales and profits derived from our products once they are approved.

For example, in the United States, the Patient Protection and Affordable Care Act of 2010, or ACA, substantially changed the way health care is financed by both governmental and private insurers and significantly affects the pharmaceutical industry. Many provisions of ACA impact the biopharmaceutical industry, including that in order for a biopharmaceutical product to receive federal reimbursement under the Medicare Part B and Medicaid programs or to be sold directly to U.S. government agencies, the manufacturer must extend discounts to entities eligible to participate in the drug pricing program under the Public Health Services Act, or PHS. Since its enactment, there have been judicial and Congressional challenges and amendments to certain aspects of ACA and the Trump administration took executive actions and eliminated the individual shared responsibility penalty portion of the ACA. A court decision finding the ACA to be unconstitutional was appealed to the U.S. Supreme Court. On June 21, 2021, the United States Supreme Court held in a 7-2 decision that the states and individuals that had previously challenged the constitutionality of the ACA's individual mandate lacked standing to challenge the law, thus ending the legal challenges to the ACA.

We cannot be sure whether additional legislative changes will be enacted, or whether government regulations, guidance or interpretations will be changed, or what the impact of such changes would be on the marketing approvals, sales, pricing, or reimbursement of our drug candidates or products, if any, may be.

Consolidation in the healthcare industry could lead to demands for price concessions.

The cost of healthcare has risen significantly over the past decade and numerous initiatives and reforms initiated by legislators, regulators and third-party payors to curb these costs have resulted in a consolidation trend in the medical device industry. Group purchasing organizations, independent delivery networks and large single accounts in the United States and foreign markets may result in a consolidation of purchasing decisions for potential healthcare provider customers. We expect that market demand, government regulation, third-party reimbursement policies and societal pressures will continue to change the worldwide healthcare industry, resulting in further business consolidations and alliances which may exert further downward pressure on the price of CHEMOSAT and HEPZATO and adversely impact our business, financial condition and results of operations.

Risks Related to Manufacturing, Commercialization and Market Acceptance of CHEMOSAT and HEPZATO

Under the current regulatory scheme in the European Union, CHEMOSAT is approved for marketing as a device only, and doctors will separately obtain melphalan for use with CHEMOSAT. Although melphalan has been

approved in the European Union for over a decade, we are aware that there are currently three approved manufacturers of melphalan in certain countries of the European Union. If any of these manufacturers fails to provide end-users with adequate supplies of melphalan or fails to comply with the requirements of regulatory authorities, we may be unable to successfully commercialize our product in the European Union. Additionally, melphalan is not available in certain foreign countries outside the European Union where we may seek to market CHEMOSAT. If supply of melphalan remains limited or unavailable, we will be unable to commercialize CHEMOSAT in these markets, thereby limiting future sales opportunities.

If we cannot maintain or enter into acceptable arrangements for the production of melphalan and other chemotherapeutic agents, we will be unable to successfully commercialize HEPZATO in the United States or complete our global Phase 3 trial in ocular melanoma liver metastases or any future clinical trials.

We have entered into a manufacturing and supply agreements with several suppliers for our supply of melphalan for injection for our clinical trials. We may pursue agreements with additional contract manufacturers to produce melphalan and other chemotherapeutic agents for use in the future for our clinical trial program and the commercialization of CHEMOSAT and HEPZATO, as well as for labeling and finishing services. We may not be able to enter into such arrangements on acceptable terms or at all. Every manufacturer is subject to inspection by the FDA and must meet all cGMP regulatory requirements. To manufacture melphalan or other chemotherapeutic agents on our own, we would have to develop a manufacturing facility that complies with FDA regulations for the production of melphalan and each other chemotherapeutic agent we choose to manufacture for use with our system. Developing these resources would be an expensive and lengthy process and would have a material adverse effect on our revenues and profitability. If we are unable to obtain sufficient melphalan and labeling services on acceptable terms or encounter delays or difficulties in our relationships with current and future suppliers or if current and future suppliers of melphalan do not comply with applicable regulations for the manufacturing and production of melphalan, our business, financial condition and results of operations may be materially harmed.

If we cannot successfully manufacture CHEMOSAT and HEPZATO, our ability to develop and commercialize the system would be impaired.

We manufacture certain components of our products, including our proprietary filter media, and assemble and package CHEMOSAT and HEPZATO at our facility in Queensbury, New York. We have established our European headquarters in Galway, Ireland and conduct finishing operations, assembly, packaging, labeling and distribution at this facility. We currently utilize third parties to manufacture some components of CHEMOSAT and HEPZATO. We may have difficulty obtaining components for our products from our third-party suppliers in a timely manner or at all, which may adversely affect our ability to deliver CHEMOSAT and HEPZATO to purchasers.

In addition to limiting sales opportunities, delays in manufacturing CHEMOSAT and HEPZATO may adversely affect our ability to obtain regulatory approval in the United States and other jurisdictions. Our ability to conduct timely clinical trials in the United States and abroad depends on our ability to manufacture the system, including sourcing the chemotherapeutic agents or other compounds through third parties in accordance with FDA and other regulatory requirements. If we are unable to manufacture CHEMOSAT and HEPZATO in a timely manner, we may not be able to conduct the clinical trials required to obtain regulatory approval and commercialize our product.

We have implemented quality systems throughout our organization designed to enable us to satisfy the various international quality system regulations, including those of the FDA with respect to products sold in the United States and those established by the International Standards Organization, or ISO, with respect to products sold in the European Union. We are required to maintain ISO 13485 certification for medical devices to be sold in the European Union, which requires, among other items, an implemented quality system that applies to component quality, supplier control, product design and manufacturing operations. All of our facilities are presently ISO 13485:2016 certified. If our Queensbury, New York facility fails to maintain compliance with ISO 13485 and

FDA cGMP or fails to pass facility inspection or audits, our ability to manufacture at the facility could be limited or terminated. In the future, we may manufacture and assemble CHEMOSAT and HEPZATO in our Galway, Ireland facility or elsewhere in the European Union, and any facilities in the European Union would have to obtain and maintain similar approvals or certifications of compliance.

Although Delcath is not aware of any direct impacts of the war between the Ukraine and the Russian Federation on its supply chain, the war could adversely impact Delcath's ability to obtain components and/or significantly increase the cost of obtaining such components fo r the Company's products from its third-party suppliers in a timely manner or at all.

We do not have written contracts with all of our suppliers for the manufacture of components for CHEMOSAT and HEPZATO.

While we have written contracts and supply agreements for key components for CHEMOSAT and HEPZATO, we do not have written contracts with all suppliers for the manufacture of components for CHEMOSAT and HEPZATO. If we are unable to obtain an adequate supply of the necessary components or negotiate acceptable terms, we may not be able to manufacture CHEMOSAT and HEPZATO in commercial quantities or in a cost-effective manner, and commercialization of CHEMOSAT and HEPZATO in the United States, the European Union and elsewhere may be delayed. In addition, certain components are available from only a limited number of sources. Components of CHEMOSAT and HEPZATO are currently manufactured for us in small quantities. We may require significantly greater quantities to further commercialize the product. We may not be able to find alternate sources of comparable components. If we are unable to obtain adequate supplies of components from existing suppliers or need to switch to an alternate supplier and obtain FDA or other regulatory agency approval of that supplier, commercialization of CHEMOSAT and HEPZATO may be delayed.

Even if we receive FDA or other foreign regulatory approvals, we may be unsuccessful in commercializing CHEMOSAT and HEPZATO in markets outside the European Union, because of inadequate infrastructure or an ineffective commercialization strategy.

Even if we obtain regulatory approval from the FDA or other foreign regulatory agencies, our ability to commercialize CHEMOSAT and HEPZATO may be limited due to our inexperience in developing a sales, marketing and distribution infrastructure. If we are unable to develop this infrastructure in the United States or elsewhere or to collaborate with an alliance partner to market our products in the United States or foreign countries, particularly in Asia, our efforts to commercialize CHEMOSAT and HEPZATO or any other product outside of the European Union may be less successful.

Even if we are successful in commercializing CHEMOSAT in the European Union, we may not be successful in commercializing HEPZATO in the United States and CHEMOSAT or HEPZATO in other foreign countries. Each country requires a different commercialization strategy, so our European Union marketing strategy may not translate to other markets. Without a successful commercialization strategy tailored for each market, our efforts to promote and market CHEMOSAT in each of our target markets may fail in any or all of those markets.

Our plan to use collaborative arrangements with third parties to help finance and to market and sell CHEMOSAT and HEPZATO may not be successful.

We may be unable to enter into collaborative agreements without additional clinical data or unable to continue a collaborative agreement as a result of unsuccessful future clinical trials. Additionally, we may face competition in the search for alliances. As a result, we may not be able to enter into alliances on acceptable terms, if at all. Our collaborative relationships may never result in the successful development or commercialization of CHEMOSAT and HEPZATO or any other product. The success of any collaboration will depend upon our ability to perform our obligations under any agreements as well as factors beyond our control, such as the commitment of our collaborators and the timely performance of their obligations. The terms of any such

collaboration may permit our collaborators to abandon the alliance at any time for any reason or prevent us from terminating arrangements with collaborators who do not perform in accordance with our expectations, or our collaborators may breach their agreements with us. In addition, any third parties with whom we collaborate may have significant control over important aspects of the development and commercialization of our products, including research and development, market identification, marketing methods, pricing, composition of sales force and promotional activities. We will not control the amount and timing of resources that any collaborator may devote to our research and development programs or the commercialization, marketing or distribution of our products. We may not be able to prevent any collaborators from pursuing alternative technologies or products that could result in the development of products that compete with CHEMOSAT and HEPZATO or the withdrawal of their support for our products. The failure of any such collaboration could have a material adverse effect on our business.

If we fail to overcome the challenges inherent in international operations, our business and results of operations may be materially adversely affected.

Currently we have only received authorization to market CHEMOSAT in the European Union and intend to seek similar authorization or approvals in other foreign countries. As a result, we expect international sales of CHEMOSAT to account for a significant portion of our revenue, which exposes us to risks inherent in international operations. To accommodate our international sales, we will need to further invest financial and management resources to develop an international infrastructure that will meet the needs of our customers. Accordingly, we will face additional risks resulting from our international operations including:

- difficulties in enforcing agreements and collecting receivables in a timely manner through the legal systems of many countries outside the United States;
- the failure to satisfy foreign regulatory requirements to market our products on a timely basis or at all;
- availability of, and changes in, reimbursement within prevailing foreign healthcare payment systems;
- difficulties in managing foreign relationships and operations, including any relationships that we establish with foreign sales or marketing employees and agents;
- limited protection for intellectual property rights in some countries;
- fluctuations in currency exchange rates;
- the possibility that foreign countries may impose additional withholding taxes or otherwise tax our foreign income, impose tariffs or adopt other restrictions on foreign trade;
- the possibility of any material shipping delays;
- significant changes in the political, regulatory, safety or economic conditions in a country or region;
- protectionist laws and business practices that favor local competitors; and
- trade restrictions, including the imposition of, or significant changes to, the level of tariffs, customs duties and export quotas.

If we fail to overcome the challenges inherent in international operations, our business and results of operations may be materially adversely affected.

Rapid technological developments in treatment methods for liver cancer and competition with other forms of liver cancer treatments could affect our ability to achieve meaningful revenues or profit.

Competition in the cancer treatment industry is intense. CHEMOSAT and HEPZATO compete with all forms of liver cancer treatments that are alternatives to surgical resection. Many of our competitors have substantially greater resources and considerable experience in conducting clinical trials and obtaining regulatory approvals. If these competitors develop more effective or more affordable products or treatment methods, or achieve earlier product development, our revenues or profitability will be substantially reduced.

If another company has orphan drug designations for the same drug and indication as us and receives marketing approval before we do, then we will be blocked from marketing approval for seven years from the date of its approval for the same indication of use unless we can make a showing of the clinical superiority of our drug.

Risks Related to our Intellectual Property

Intellectual property rights may not provide adequate protection, which may permit third parties to compete against us more effectively.

Our success depends significantly on our ability to maintain and protect our proprietary rights in the technologies and inventions used in or embodied by our products. To protect our proprietary technology, we rely on patent protection, as well as a combination of copyright, trade secret and trademark laws, as well as nondisclosure, confidentiality, license and other contractual restrictions in our employment, manufacturing, consulting and other third-party agreements. These legal means may afford only limited protection, however, and may not adequately protect our rights or permit us to gain or keep any competitive advantage.

We have not and may not be able to adequately protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on our products and technologies in all countries throughout the world could be prohibitively expensive. The requirements for patentability may differ in certain countries, particularly developing countries, and the breadth of patent claims allowed can be inconsistent. In addition, the laws of some foreign countries may not protect our intellectual property rights to the same extent as laws in the United States. Consequently, we may not be able to prevent third parties from copying our inventions in foreign countries to the extent we can in the United States. Competitors may use our technologies in jurisdictions where we have not obtained patent protection that covers the commercial products to develop their own competing products that are the same or substantially the same as our commercial product and, further, may export otherwise infringing products to territories where we have patent protection, but judicial systems do not adequately enforce patents to cause infringing activities to be ceased.

We do not have patent rights in certain foreign countries in which a market for our product and technologies exists or may exist in the future. Moreover, in foreign jurisdictions where we do have patent rights, proceedings to enforce such rights could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, and our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Thus, we may not be able to stop a competitor from marketing and selling in foreign countries products that are the same as or similar to our product and technologies.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

The United States Patent and Trademark Office (USPTO), and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In addition, periodic maintenance fees on issued patents often must be paid to the USPTO and foreign patent agencies over the lifetime of the patent. While an unintentional lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we fail to maintain the patents and patent applications covering our product or procedures,

we may not be able to stop a competitor from marketing products that are the same as or similar to our product and technologies.

Our success depends in part on our ability to obtain patents, which can be an expensive, time consuming, and uncertain process, and the value of the patents is dependent in part on the breadth of coverage and the relationship between the coverage and the commercial product.

The patent position of medical drug and device companies is generally highly uncertain. The degree of patent protection we require may be unavailable or severely limited in some cases and may not adequately protect our rights or permit us sufficient exclusivity, or to gain or keep our competitive advantage. For example:

- we might not have been the first to invent or the first to file patent applications on the inventions covered by each of our pending patent applications and issued patents;
- others may independently develop similar or alternative technologies or duplicate any of our technologies;
- the patents of others may have an adverse effect on our business;
- any patents we obtain or license from others in the future may not encompass commercially viable products, may not provide us with any competitive advantages or may be challenged by third parties; and
- any patents we obtain or license from others in the future may not be valid or enforceable.

The process of applying for patent protection itself is time consuming and expensive and we cannot assure you that we have prepared or will be able to prepare, file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is possible that innovation over the course of development and commercialization may lead to changes in CHEMOSAT and HEPZATO methods and/or devices that cause such methods and/or devices to fall outside the scope of the patent protection we have obtained and the patent protection we have obtained may become less valuable. It is also possible that we will fail to identify patentable aspects of inventions made in the course of development and commercialization activities before it is too late to obtain patent protection on them. In addition, our patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. It is possible that defects of form in the preparation or filing of our patents or patent applications may exist, or may arise in the future, for example, with respect to proper priority claims, inventorship, claim scope or patent term adjustments. Moreover, we cannot assure you that all of our pending patent applications will issue as patents or that, if issued, they will issue in a form that will be advantageous to us.

Our success depends in part on our ability to commercialize CHEMOSAT and HEPZATO prior to the expiration of our patent protection.

Our patent protection for CHEMOSAT and HEPZATO is primarily in the United States and the EU. We currently have patents in the United States and the EU directed to our product, system, procedure, and method of treatment. Our patents provide patent protection for our CHEMOSAT hepatic delivery system, HEPZATO, hemofiltration cartridge apparatus, hemofiltration cartridge design, methods of treatment of a subject with cancer in accordance with various embodiments of our system, embodiments of our system for delivering a high concentration of a small molecule chemotherapeutic agent to a subject while minimizing systemic exposure to the small molecule chemotherapeutic agent, and methods of setting up a filter apparatus for hemofiltration in accordance with our procedures using our proprietary hepatic deliver system. However, patents have a limited lifespan. In the United States and the EU, the ordinary statutory natural expiration of a utility patent is generally 20 years from its filing date. Various extensions may be available; however, the life of a patent, and the protection it affords, is limited.

We may in the future become involved in lawsuits to protect or enforce our intellectual property, or to defend our products against assertion of intellectual property rights by a third party, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents or misappropriate or otherwise violate our intellectual property rights. To stop any such infringement or unauthorized use, litigation may be necessary. Our intellectual property has not been tested in litigation. There is no assurance that any of our issued patents will be upheld if later challenged or will provide significant protection or commercial advantage. A court may declare our patents invalid or unenforceable, may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question, or may interpret the claims of our patents narrowly, thereby substantially narrowing the scope of patent protection they afford. Because of the length of time and expense associated with bringing new medical drugs and devices to the market, the healthcare industry has traditionally placed considerable emphasis on patent and trade secret protection for significant new technologies. Other parties may challenge patents, patent claims or patent applications licensed or issued to us, or may design around technologies we have patented, licensed or developed.

In addition, third parties may initiate legal or administrative proceedings against us to challenge the validity or scope of our intellectual property rights, such as inter partes review, post-grant review, re-examination or opposition proceedings before the USPTO, the European Patent Office or other foreign counterparts. Third parties may also allege an ownership right in our patents, as a result of their past employment or consultancy with us. Many of our current and potential competitors have the ability to dedicate substantially greater resources to defend their intellectual property rights than we can. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property. Competing products may also be sold in other countries in which our patent coverage might not exist or be as strong. If we lose a foreign patent lawsuit, alleging our infringement of a competitor's patents, we could be prevented from marketing our product in one or more foreign countries.

Our competitors or other patent holders may assert that our products and the methods employed in our products are covered by their patents. Although we have performed a search for third-party patents and believe we have adequate defenses available if faced with any allegations that we infringe these third-party patents, it is possible that CHEMOSAT and HEPZATO could be found to infringe these patents. It is also possible that our competitors or potential competitors may have patents, or have applied for, will apply for, or will obtain patents that will prevent, limit or interfere with our ability to make, have made, use, sell, offer for sale, import or export our product. If our products or methods are found to infringe, we could be prevented from manufacturing or marketing our product.

Companies in the medical drug/device industry may use intellectual property infringement litigation to gain a competitive advantage. In the United States, patent applications filed in recent years are confidential for 18 months, while older applications are not publicly available until the patent issues. As a result, avoiding patent infringement may be difficult. Litigation may be necessary to enforce any patents issued or assigned to us or to determine the scope and validity of third-party proprietary rights. Litigation could be costly and could divert our attention from our business. There are no guarantees that we will receive a favorable outcome in any such litigation. If a third-party claims that we infringed its patents, any of the following may occur:

- we may become liable for substantial damages for past infringement if a court decides that our technologies infringe upon a competitor's patent;
- we may become prohibited from selling or licensing our product without a license from the patent holder, which may not be available on commercially acceptable terms or at all, or which may require us to pay substantial royalties or grant cross-licenses to our patents; and
- we may have to redesign our product so that it does not infringe upon others' patent rights, which may not be possible or could require substantial funds or time.

Litigation related to infringement and other intellectual property claims such as trade secrets, with or without merit, is unpredictable, can be expensive and time-consuming, and can divert management's attention from our core business. If we lose this kind of litigation, a court could require us to pay substantial damages, treble damages, and attorneys' fees, and could prohibit us from using technologies essential to our product, any of which would have a material adverse effect on our business, results of operations, and financial condition. If relevant third-party patents are upheld as valid and enforceable and we are found to infringe, we could be prevented from selling our product unless we can obtain licenses to use technology covered by such patents. We do not know whether any necessary licenses would be available to us on satisfactory terms, if at all. If we cannot obtain these licenses, we could be forced to design around those patents at additional cost or abandon the product altogether. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could cause the price of our common stock to decline.

If others have filed patent applications with respect to inventions for which we already have patents issued to us or have patent applications pending, we may be forced to participate in interference or derivation proceedings declared by the USPTO to determine priority of invention, which could also be costly and could divert our attention from our business. If the USPTO declares an interference and determines that our patent or application is not entitled to a priority date earlier than that of the other patent application, our ability to maintain or obtain those patent rights will be curtailed. Similarly, if the USPTO declares a derivation proceeding and determines that the invention covered by our patent application was derived from another, we will not be able to obtain patent coverage of that invention.

Because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that, before CHEMOSAT and HEPZATO or any other product can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantages of the patent. Not all of our United States patent rights have corresponding patent rights effective in European or other foreign jurisdictions. Similar considerations apply in any other country where we are prosecuting patent applications, have been issued patents, or have decided not to pursue patent protection relating to our technology. The laws of foreign countries may not protect our intellectual property rights to the same extent as do laws of the United States.

Changes in patent law could diminish the value of patents in general, thereby impairing our ability to protect our product and our technologies.

Patent reform legislation may pass in the future that could lead to additional uncertainties and increased costs surrounding the prosecution, enforcement, and defense of our patents and applications. Furthermore, the United States Supreme Court and the United States Court of Appeals for the Federal Circuit have made, and will likely continue to make, changes in how the patent laws of the United States are interpreted. Similarly, foreign courts have made, and will likely continue to make, changes in how the patent laws in their respective jurisdictions are interpreted. We cannot predict future changes in the interpretation of patent laws or changes to patent laws that might be enacted into law by United States and foreign legislative bodies. Those changes may materially affect our patents or patent applications and our ability to obtain and enforce or defend additional patent protection in the future.

Our trademarks may be infringed or successfully challenged, resulting in harm to our business.

We rely on our trademarks as one means to distinguish for our customers our products from the products of our competitors, and we have registered or applied to register many of these trademarks. The USPTO or foreign trademark offices may deny our trademark applications, however, and even if published or registered, these trademarks may be ineffective in protecting our brand and goodwill and may be successfully opposed or

challenged. Third parties may oppose our trademark applications, or otherwise challenge our use of our trademarks. In addition, third parties may use marks that are confusingly similar to our own, which could result in confusion or a likelihood of confusion among our customers, thereby weakening the strength of our brand or allowing such third parties to capitalize on our goodwill. In such an event, or if our trademarks are successfully challenged, we could be forced to rebrand our product, which could result in loss of brand recognition and could require us to devote resources to advertising and marketing new brands. Our competitors may infringe our trademarks and we may not have adequate resources to enforce our trademark rights in the face of any such infringement.

We may rely primarily on trade secret protection for important proprietary technologies.

In addition to patent and trademark protection, we also rely on trade secrets, including unpatented know-how, technology, and other proprietary information, to maintain our competitive position. Unlike patents, trade secrets are only recognized under applicable law if they are kept secret by restricting their disclosure to third parties. We protect our trade secrets and proprietary knowledge in part through confidentiality agreements with employees, consultants and other parties. However, certain consultants and third parties with whom we have business relationships, and to whom in some cases we have disclosed trade secrets and other proprietary knowledge, may also provide services to other parties in the medical device industry, including companies, universities and research organizations that are developing competing products. In addition, some of our former employees who were exposed to certain of our trade secrets and other proprietary knowledge in the course of their employment may seek employment with, and become employed by, our competitors. We cannot be assured that consultants, employees and other third parties with whom we have entered into confidentiality agreements will not breach the terms of such agreements by improperly using or disclosing our trade secrets or other proprietary knowledge. Monitoring unauthorized uses and disclosures of our intellectual property is difficult, and we do not know whether the steps we have taken to protect our intellectual property will be effective. In addition, we may not be able to obtain adequate remedies for any such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets.

Trade secret protection does not prevent independent discovery of the technology or proprietary information or use of the same. Competitors may independently duplicate or exceed our technology in whole or in part. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us in countries where we do not have patent protection.

Similar considerations apply in foreign countries where we receive approval and do not have issued patents for the current version of CHEMOSAT and HEPZATO. In these countries, our ability to successfully commercialize CHEMOSAT and HEPZATO will depend on our ability to maintain trade secret protection in these markets.

We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged trade secrets of our competitors or are in breach of non-competition or non-solicitation agreements with our competitors.

We could in the future be subject to claims that we or our employees have inadvertently or otherwise used or disclosed alleged trade secrets or other proprietary information of former employers, competitors, or other third parties. Although we endeavor to ensure that our employees and consultants do not use the intellectual property, proprietary information, know-how or trade secrets of others in their work for us, we may in the future be subject to claims that we caused an employee to breach the terms of his or her non-competition or non-solicitation agreement, or that we or these individuals have, inadvertently or otherwise, used or disclosed the alleged trade secrets or other proprietary information of a former employer or competitor. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and could be a distraction to management. If our defense to those claims fails, in addition to

paying monetary damages, a court could prohibit us from using technologies or features that are essential to our product, if such technologies or features are found to incorporate or be derived from the trade secrets or other proprietary information of the former employers or other third parties. An inability to incorporate technologies or features that are important or essential to our product may prevent us from selling our product. In addition, we may lose valuable intellectual property rights or personnel. Moreover, any such litigation or the threat thereof may adversely affect our ability to hire employees or contract with independent sales representatives. A loss of key personnel or their work product could hamper or prevent our ability to commercialize our product.

Risks Related to Our Common Stock

The market price of our common stock has been, and may continue to be volatile and fluctuate significantly, which could result in substantial losses for investors.

The trading price of our common stock has been, and we expect it to continue to be, volatile. The price at which our common stock trades depends upon a number of factors, including historical and anticipated operating results, our financial situation, announcements of technological innovations or new products by us or our competitors, our ability or inability to raise the additional capital needed and the terms on which it may be raised, and general market and economic conditions. Some of these factors are beyond our control. Broad market fluctuations may lower the market price of our common stock and affect the volume of trading, regardless of our financial condition, results of operations, business or prospects. Among the factors that may cause the market price of our common stock to fluctuate are the risks described elsewhere in this "Risk Factors" section and other factors, including:

- fluctuations in our quarterly operating results or the operating results of competitors;
- variance in financial performance from the expectations of investors;
- changes in the estimation of the future size and growth rate of our markets;
- changes in accounting principles or changes in interpretations of existing principles, which could affect financial results;
- conditions and trends in the markets served;
- changes in general economic, industry and market conditions;
- success of competitive products and services;
- changes in market valuations or earnings of competitors;
- changes in pricing policies or the pricing policies of competitors;
- announcements of significant new products, contracts, acquisitions or strategic alliances by us or our competitors;
- potentially negative announcements, such as a review of any of our filings by the SEC, changes in accounting treatment or restatements of previously reported financial results or delays in our filings with the SEC;
- the commencement or outcome of litigation involving us, our general industry or both;
- our filing for protection under federal bankruptcy laws;
- changes in capital structure, such as future issuances of securities or the incurrence of additional debt;
- actual or expected sales of common stock by stockholders; and
- the trading volume of our common stock.

In addition, the stock markets and the market for pharmaceutical companies in particular, may experience a loss of investor confidence. Such loss of investor confidence may result in extreme price and volume fluctuations in

our common stock that are unrelated or disproportionate to the operating performance of our business, financial condition or results of operations. These broad market and industry factors may materially harm the market price of our common stock and expose the Company to securities class action litigation. Such litigation, even if unsuccessful, could be costly to defend and divert management's attention and resources, which could further materially harm our financial condition and results of operations.

Sales of a substantial number of shares of our common stock in the public market, or the perception that such sales may occur, could adversely affect the market price of our common stock and could impair our ability to raise additional equity capital.

Sales of a substantial number of shares of our common stock in the public market, or the perception that such sales may occur, could cause the market price of our common stock to decline and could impair our ability to raise capital through the sale of additional equity securities. We cannot predict the effect that future sales of shares of our common stock or other equity-related securities would have on the market price of our common stock.

We have a history of reverse splits, which have severely impacted our common stock price.

Since our initial public offering in 2000, we have effected five reverse stock splits, for a cumulative ratio since our IPO of 1:31,360,000,000. Each such reverse split has resulted in an effective decline in the price of our common stock. There can be no assurance that we will not be required to effect one or more additional reverse stock splits which could further impact the market price and liquidity of our common stock.

Anti-takeover provisions in our Amended and Restated Certificate of Incorporation and By-laws may reduce the likelihood of a potential change of control or make it more difficult for our stockholders to replace management.

Certain provisions of our Amended and Restated Certificate of Incorporation and By-laws could have the effect of making it more difficult for our stockholders to replace management at a time when a substantial number of stockholders might favor a change in management. These provisions include:

- providing for a staggered board; and
- authorizing the board of directors to fill vacant directorships or increase the size of the board of directors.

Furthermore, our board of directors has the authority to issue up to 10,000,000 shares of preferred stock in one or more series and to determine the rights and preferences of the shares of any such series without stockholder approval. Any series of preferred stock is likely to be senior to the common stock with respect to dividends, liquidation rights and, possibly, voting rights. The board's ability to issue preferred stock may have the effect of discouraging unsolicited acquisition proposals, thus adversely affecting the market price of our common stock.

We have never declared or paid any dividends to the holders of our common stock and we do not expect to pay cash dividends in the foreseeable future.

We intend to retain all earnings for use in connection with the expansion of our business and for general corporate purposes. The board of directors will have the sole discretion in determining whether to declare and pay dividends in the future. The declaration of dividends will depend on profitability, financial condition, cash requirements, future prospects and other factors deemed relevant by our board of directors. Our ability to pay cash dividends in the future could be limited or prohibited by the terms of financing agreements that we may enter into or by the terms of any preferred stock that may be authorized and issued. We do not expect to pay dividends in the foreseeable future. As a result, holders of our common stock must rely on stock appreciation for any return on their investment.

If we engage in acquisitions, reorganizations or business combinations, we will incur a variety of risks that could adversely affect our business operations or our stockholders.

From time to time, we may consider strategic alternatives, such as acquiring businesses, technologies or products or entering into a business combination with another company. If we do pursue such a strategy, we could, among other things:

- issue equity securities that would dilute current stockholders' percentage ownership;
- incur substantial debt that may place strains on our operations;
- spend substantial operational, financial and management resources in integrating new businesses, personnel, intellectual property, technologies and products;
- assume substantial actual or contingent liabilities;
- reprioritize our programs and even cease development and commercialization of CHEMOSAT and HEPZATO;
- suffer the loss of key personnel, or
- merge with, or otherwise enter into a business combination with, another company in which our stockholders would receive cash or shares of the other company or a combination of both on terms that certain of our stockholders may not deem desirable.

Although we intend to evaluate and consider different strategic alternatives, we have no agreements or understandings with respect to any acquisition, reorganization, or business combination at this time.

General Risk Factors

The loss of key personnel could adversely affect our business.

Our success depends upon the efforts of our employees. The loss of any of our senior executives or other key employees could harm its business. Competition for experienced personnel is intense and, if key individuals leave us, we could be adversely affected if suitable replacement personnel are not quickly identified and hired. Competition for qualified individuals exists in all functional areas, which makes it difficult to attract and retain the qualified employees we need to operate our business. Our success also depends in part on our ability to attract and retain highly qualified scientific, technical, commercial and administrative personnel. If we are unable to attract new employees and retain our current key employees, our ability to compete could be adversely affected and the development and commercialization of our products could be delayed or negatively impacted.

We rely on the proper function, availability and security of information technology systems to operate our business and a cyber-attack or other breach of these systems could have a material adverse effect on our business, financial condition or results of operations.

We rely on information technology systems to process, transmit, and store electronic information in our day-to-day operations. Similar to other companies, the size and complexity of our information technology systems makes them vulnerable to a cyber-attack, malicious intrusion, breakdown, destruction, loss of data privacy, or other significant disruption. Our information systems require an ongoing commitment of significant resources to maintain, protect, and enhance existing systems and develop new systems to keep pace with continuing changes in information processing technology, evolving systems and regulatory standards. Any failure by us to maintain or protect our information technology systems and data integrity, including from cyber-attacks, intrusions or other breaches, could result in the unauthorized access to personally identifiable information, theft of intellectual property or other misappropriation of assets, or otherwise compromise our confidential or proprietary information and disrupt our operations. Any of these events may cause us to have

difficulty preventing, detecting, and controlling fraud, be subject to legal claims and liability, have regulatory sanctions or penalties imposed, have increases in operating expenses, incur expenses or lose revenues as a result of a data privacy breach or theft of intellectual property, or suffer other adverse consequences, any of which could have a material adverse effect on our business, financial condition or results of operations.

We may be the subject of product liability claims or product recalls, and we may be unable to maintain insurance adequate to cover potential liabilities.

Our business exposes us to potential liability risks that may arise from clinical trials and the testing, manufacture, marketing, sale and use of CHEMOSAT and HEPZATO. In addition, because CHEMOSAT and HEPZATO are intended for use in patients with cancer, there is an increased risk of death among the patients treated with our system, which may increase the risk of product liability lawsuits related to clinical trials or commercial sales. We may be subject to claims against us even if the injury is due to the actions of others. For example, if the medical personnel that use our system on patients are not properly trained or are negligent in the use of the system, the patient may be injured, which may subject us to claims. Were such a claim asserted, we would likely incur substantial legal and related expenses even if we prevail on the merits. Claims for damages, whether or not successful, could cause delays in clinical trials and result in the loss of physician endorsement, adverse publicity and/or limit our ability to market and sell the system, resulting in loss of revenue. In addition, it may be necessary for us to recall products that do not meet approved specifications, which would also result in adverse publicity and costs connected to the recall and loss of revenue. A successful products liability claim or product recall would have a material adverse effect on our business, financial condition, and results of operations. While we currently carry product liability and clinical trial insurance coverage, it may be insufficient to cover one or more large claims.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 2. Properties.

Our corporate offices currently occupy 6,877 square feet of office space at 1633 Broadway, Suite 22C, New York, New York under a sub-lease agreement that expires in February 2023. See Note 9 to our audited consolidated financial statements contained in this Annual Report on Form 10-K for more details. We also own two buildings comprised of approximately 10,320 square feet at 566 Queensbury Avenue in Queensbury, New York and 6,000 square feet at 95-97 Park Road in Queensbury, New York. These facilities house manufacturing, quality assurance and quality control, research and development, and office space functions. We also own approximately four acres of land at 12 and 14 Park Road in Queensbury, New York. In addition, we sub-lease a facility for office and manufacturing comprised of approximately 2,409 square feet at 19 Mervue, Industrial Park in Galway, Ireland under a lease agreement that expires in August 2026. We believe substantially all of our property and equipment is in good condition and that we have sufficient capacity to meet current operational needs.

Item 3. Legal Proceedings.

In April 2021, the Company's wholly-owned subsidiary, Delcath Systems Ltd issued to medac GmbH, a privately held, multi-national pharmaceutical company based in Germany ("medac"), an invoice for a €1 million milestone payment under a License, Supply and Marketing Agreement dated December 10, 2018 (the "medac Agreement") between medac and the Company. The medac Agreement provided to medac the exclusive right to market and sell CHEMOSAT in all member states of the European Union, Norway, Liechtenstein, Switzerland and the United Kingdom for which the Company was entitled to a combination of upfront and success-based milestone payments as well as a fixed transfer price per unit of CHEMOSAT and specified royalties.

In response to medac's subsequent dispute and non-payment of the invoice, on October 12, 2021, the Company notified medac in writing that it was terminating the medac Agreement due to medac's nonpayment of the €1 million milestone payment, with the effective date of termination of the medac Agreement being April 12, 2022. medac disputed having an obligation to make the milestone payment and demanded withdrawal of the termination notice. In response to medac's continued failure to make the milestone payment and its demand for the Company to withdraw its termination notice, on December 16, 2021, we initiated an arbitration proceeding pursuant to the dispute resolution procedures of the medac Agreement. Thereafter, on December 30, 2021, we received a letter from medac stating that, due to our failure to withdraw the termination notice, medac was terminating the medac Agreement with immediate effect. In its letter, medac reserved its rights in full, including a purported claim for damages for wrongful termination. The arbitration proceeding is moving forward with the parties agreeing to stay the arbitration for a finite period to pursue settlement discussions.

From time to time, claims are made against the Company in the ordinary course of business, which could result in litigation. Claims and associated litigation are subject to inherent uncertainties and unfavorable outcomes could occur, such as monetary damages, fines, penalties, or injunctions prohibiting us from selling our products or engaging in other activities. The occurrence of an unfavorable outcome in any specific period could have a material adverse effect on our results of operations for that period or future periods.

Item 4. Mine Safety Disclosures.

Not applicable.

Part II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Market Information. The Company's common stock, par value $0.01 per share, is traded on the Nasdaq Capital Market under the symbol "DCTH".

Holders. On March 10, 2022, there were approximately 15,047 stockholders of record of the Company's common stock.

Dividend Policy. The Company has never declared or paid cash dividends on its common stock and has no intention to do so in the foreseeable future.

Recent Sales of Unregistered Securities. There were no unregistered securities of the Company sold by the Company during the fiscal year ended December 31, 2021.

Repurchases of Equity Securities. The Company did not repurchase any shares of our common stock during the fourth quarter of the fiscal year ended December 31, 2021.

Item 6.

Not required.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion of our financial condition and results of operations should be read in conjunction with our audited consolidated financial statements and notes thereto appearing elsewhere in this Annual Report on Form 10-K.

Overview

We are an interventional oncology company focused on the treatment of primary and metastatic liver cancers. Our lead product candidate, the HEPZATO™ KIT (melphalan hydrochloride for injection/hepatic delivery system), or HEPZATO™, is a drug/device combination product designed to administer high-dose chemotherapy to the liver while controlling systemic exposure and associated side effects. HEPZATO has not been approved for sale in the United States. In Europe, HEPZATO is a stand-alone medical device having the same device components as HEZPATO, but without the melphalan hydrochloride, and is approved for sale under the trade name CHEMOSAT® Hepatic Delivery System for Melphalan, or CHEMOSAT, where it has been used at major medical centers to treat a wide range of cancers of the liver.

In the United States, HEPZATO is considered a combination drug and device product and is regulated as a drug by the United States Food and Drug Administration, or the FDA. Primary jurisdiction for regulation of HEPZATO has been assigned to the FDA's Center for Drug Evaluation and Research. The FDA has granted Delcath six orphan drug designations (five for melphalan in the treatment of patients with ocular (uveal) melanoma, cutaneous melanoma, hepatocellular carcinoma, intrahepatic cholangiocarcinoma, and neuroendocrine tumors) and one for doxorubicin in the treatment of patients with hepatocellular carcinoma). HEPZATO has not been approved for sale in the United States.

Our most advanced development program is the treatment of ocular melanoma liver metastases, or mOM, a type of primary liver cancer. We are currently reviewing the incidence, unmet need, available efficacy data and development requirements for a broad set of liver cancers in order to select a portfolio of indications which will maximize the value of the HEPZATO platform. We believe that the disease states we are investigating and intend to investigate are unmet medical needs that represent significant market opportunities.

We are investigating the objective response rate of HEPZATO in patients with mOM in our FOCUS Clinical Trial for Patients with Hepatic Dominant Ocular Melanoma, or the FOCUS Trial, a global registration clinical trial. For information on the FOCUS Trial, see "Part I, Item 1. Business—Clinical Development Program—The FOCUS Trial" above.

Due to the global outbreak of SARS-CoV-2, a novel strain of coronavirus that causes Coronavirus disease (COVID-19), the Company experienced an impact on certain areas of its business. These effects included a slowing of patient recruitment in the FOCUS Trial and a reduction in the pace at which we can monitor data at our clinical trial sites. The resulting delay in completing enrollment and additional time required to monitor data caused our planned announcement for the top-line data from our FOCUS Trial to shift to December 2021. In December 2021, we announced that HEPZATO met its prespecified endpoint. Based on the FOCUS Trial results, we are preparing to submit a new drug application, or NDA, to the FDA for HEPZATO. We plan to request a pre-NDA meeting with the FDA and, pending feedback from FDA and the pace of complete data analysis from our clinical sites which have been impacted by the COVID-19 pandemic, we intend to submit an NDA to the FDA by mid-2022 for the use of HEPZATO in the treatment of mOM. The results of the FOCUS Trial should also support securing reimbursement coverage for the use of CHEMOSAT in the European Union. Additional impacts of COVID-19 on our business may arise that we are not aware of currently. The ultimate impact of the pandemic on the Company's results of operations, financial position, liquidity, or capital resources cannot be reasonably estimated at this time.

Liquidity and Capital Resources

At December 31, 2021, we had cash, cash equivalents and restricted cash totaling $27.0 million, as compared to cash, cash equivalents and restricted cash totaling $28.8 million at December 31, 2020. During the years ended December 31, 2021 and 2020, the Company used $22.6 million and $22.9 million respectively, of cash in our operating activities.

Our future results are subject to substantial risks and uncertainties. We have operated at a loss for our entire history and there can be no assurance that we will ever achieve consistent profitability. We have historically funded our operations through a combination of private placements and public offerings of our securities. We will need to raise additional capital under structures available to us, including debt and/or equity offerings.

These circumstances raise substantial doubt about the Company's ability to continue as a going concern within one year after the date that the financial statements are issued. Our financial statements do not include adjustments to the amounts and classification of assets and liabilities that may be necessary should we be unable to continue as a going concern. Our ability to continue as a going concern depends on our ability to raise additional capital through the sale of equity or debt securities to support our future operations.

Our capital commitments over the next twelve months include (a) $5.2 million to satisfy December 31, 2021 accounts payable, accrued expenses and lease liabilities; (b) $0.6 million of loan principal payments; and (c) potentially $0.5 million of severance payments. Our capital commitments past the next twelve months include (a) $0.2 million of lease liabilities; (b) $10.4 million of loan principal payments; and (c) $4.6 million of convertible note principal payments, if the holders do not elect to convert the notes into equity.

We also expect to use cash, cash equivalents and investment proceeds to fund our clinical research and operating activities. Our future liquidity and capital requirements will depend on numerous factors, including the initiation and progress of clinical trials and research and product development programs; obtaining regulatory approvals and complying with applicable laws and regulations; the timing and effectiveness of product commercialization activities, including marketing arrangements; the timing and costs involved in preparing, filing, prosecuting, defending and enforcing intellectual property rights; and the effect of competing technological and market developments.

If we are unable to secure additional capital, we may be required to curtail our research and development initiatives and take additional measures to reduce costs in order to conserve our cash.

On August 6, 2021, the Company entered into a Loan and Security Agreement (the "Avenue Loan Agreement") with Avenue Venture Opportunities Fund, L.P. (the "Lender," or "Avenue") for a term loan in an aggregate principal amount of up to $20 million (the "Avenue Loan"). The Avenue Loan bears interest at an annual rate equal to the greater of (a) the sum of 7.70% plus the prime rate as reported in The Wall Street Journal and (b) 10.95%. The interest rate at December 31, 2021 was 10.95%. The Avenue Loan is secured by all of the Company's assets globally, including intellectual property. The Avenue Loan matures on August 1, 2024. Additional information regarding the Avenue Loan can be found in Note 10 to the Company's audited consolidated financial statements contained in this Annual Report on Form 10-K.

Results of Operations for the Year Ended December 31, 2021; Comparison of Results of the Years Ended December 31, 2021 and 2020

Revenue

We recorded approximately $1.3 million in product revenue and $2.3 million in other revenue during the year ended December 31, 2021. During the same period in 2020, we recorded $1.2 million in product revenue and $0.5 million in other revenue. Our sales in both 2021 and 2020 were primarily generated through our license agreement with medac, pursuant to which medac had served as our exclusive distributor of CHEMOSAT in the United Kingdom

and European Union. On December 30, 2021, medac terminated the license agreement and ceased distribution activities at the end of a mutually agreed transition period on February 28, 2022. Effective March 1, 2022, the Company began directly marketing CHEMOSAT in these markets. As a result of the termination of the license agreement, the Company changed its estimate of the contract life as of December 31, 2021, which resulted in the immediate recognition of $1.7 million of other revenue that had previously been deferred.

Cost of Goods Sold

During the year ended December 31, 2021, we recognized cost of goods sold of approximately $0.7 million related to product revenue of $1.3 million as compared to cost of goods sold of approximately $0.6 million related to product revenue of $1.2 million in the prior year. The increase is primarily due to the increase in product sales volume.

Research and Development Expenses

For the year ended December 31, 2021, research and development expenses increased to $13.8 million from $11.2 million for the year ended December 31, 2020, an increase of $2.6 million or 23.2%. The increase was due to additional compensation expense related to the hiring of additional employees, $1.2 million of additional stock-based compensation expense, and an increase in costs related to the ongoing FOCUS trial and preparation for the NDA submission.

Selling, General and Administrative Expenses

For the year ended December 31, 2021, selling, general and administrative expenses increased to $13.6 million from $11.1 million for the year ended December 31, 2020, an increase of $2.5 million or 22.5%. The increase is primarily due to a $3.0 million increase in stock-based compensation, partially offset by a $0.5 million decrease in professional fees.

Change in Fair Value of Derivative Liability

For the year ended December 31, 2021, there was no non-cash derivative instrument expense, compared to the non-cash derivative instrument expense of $2.8 million for the year ended December 31, 2020. In 2019, the Company issued warrants with an initial fair value of $20.8 million. At December 31, 2019, the fair value of the common stock warrants issued by the Company in 2019 was $3.4 million. In February 2020, the fair value of the warrants increased to $6.2 million, resulting in expense of $2.8 million. The entire $6.2 million warrant liability was reclassified to equity at March 31, 2020.

Interest Expense

For the year ended December 31, 2021, we recognized $1.2 million of interest expense, as compared to $0.2 million in the prior year, an increase of $1.0 million. The increase primarily relates to interest expense and amortization of debt discount associated with the Avenue Loan that commenced on August 6, 2021.

Net Loss

We had a net loss for the year ended December 31, 2021 of approximately $25.6 million, an increase of $1.4 million, as compared to a $24.2 million net loss for the same period in 2020. The increase in the net loss is due to a $5.1 million increase in operating expenses and a $1.0 increase in interest expense, partially offset by a $1.9 million increase in gross profit and a $2.8 million decrease in non-cash derivative instrument expense.

Critical Accounting Estimates

The Company's consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America ("GAAP"). Certain critical accounting estimates have a

significant impact on amounts reported in the consolidated financial statements. A summary of those critical accounting estimates is below. Additional details can be found in Note 3 to the Company's audited consolidated financial statements contained in this Annual Report on Form 10-K.

Fair Value Measurements

GAAP emphasizes that fair value is a market-based measurement, not an entity-specific measurement. Therefore, a fair value measurement should be determined based on the assumptions that market participants would use in pricing the asset or liability. As a basis for considering market participant assumptions in fair value measurements, GAAP establishes a fair value hierarchy that distinguishes between market participant assumptions based on market data obtained from sources independent of the reporting entity (observable inputs that are classified within Levels 1 and 2 of the hierarchy) and the reporting entity's own assumptions about market participant assumptions (unobservable inputs classified within Level 3 of the hierarchy).

Our fair value measurements are generally related to the valuation of warrants and stock-based compensation. Valuation of such financial instruments generally requires certain assumptions, including the fair value of our common stock (generally an observable market price, as our common stock is publicly traded), the expected term of the financial instrument (judgment is required), the expected volatility of our common stock over the expected term (generally estimated by reference to the historical volatility of our common stock), our expected dividend rate over the expected term (currently estimated as zero, given that we are not projecting profits over the intermediate term) and the expected risk-free rate over the expected term (generally estimated by reference to United States treasury instruments with similar remaining terms).

Revenue Recognition

Revenue is generated from proprietary and partnered product sales and license and royalty arrangements. Revenue is recognized when or as we transfer control of the promised goods or services to our customers in an amount that reflects the consideration to which we expect to be entitled to in exchange for those goods or services. When obligations or contingencies remain after the products are shipped, such as training and certifying the treatment centers, revenue is deferred until the obligations or contingencies are satisfied.

We may enter into contracts with partners that contain multiple elements such as licensing, development, manufacturing, and commercialization components. These arrangements are often complex, and we may receive various types of consideration over the life of the arrangement, including up-front fees, reimbursements for research and development services, milestone payments, payments on product shipments, margin sharing arrangements, license fees and royalties.

The Company recognizes revenue in accordance with ASC 606, Revenue from Contracts with Customers ("ASC 606"). The core principle of ASC 606 requires that an entity recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASC 606 defines a five-step process to achieve this core principle and, in doing so, it is possible more judgment and estimates may be required within the revenue recognition process, including identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation.

The following five steps are applied to achieve that core principle:

Step 1: Identify the contract with the customer;

Step 2: Identify the performance obligations in the contract;

Step 3: Determine the transaction price, including an estimation of any variable consideration expected to be received in connection with the contract;

Step 4: Allocate the transaction price to the performance obligations in the contract; and

Step 5: Recognize revenue when the company satisfies a performance obligation.

Each of these steps in the revenue recognition process requires management to make judgments and/or estimates. The most significant judgements and estimates involve the determination of variable consideration to be included in the transaction price. Variable consideration is recognized at an amount we believe is not subject to significant reversal and is adjusted at each reporting period if the most likely amount of expected consideration changes or becomes fixed. We believe this provides a reasonable basis for recognizing revenue; however, actual results could differ from estimates and significant changes in estimates could impact our results of operations in future periods.

As required by GAAP, the Company disaggregates its revenue into the categories of product revenue and other revenue. The Company recognizes product revenue and milestone payments at a point in time, whereas other revenues (primarily license fees) are recognized over time. Milestone payments that are contingent upon the occurrence of future events, are evaluated and recorded at the most likely amount, and to the extent that it is probable that a significant reversal will not occur when the associated uncertainty is resolved

Accrued Expenses

We utilize contract research organizations in order to perform research and development and conduct clinical trials. In some cases, these organization do not bill on a timely basis. Management monitors certain key drivers of these costs and estimates accruals in an attempt to properly match expenses incurred with the appropriate reporting period. However, there is judgment involved and the actual billings could be more or less than the estimated accrual.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not required.

Item 8. Financial Statements and Supplementary Data

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of
Delcath Systems, Inc. and Subsidiaries

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Delcath Systems, Inc. (the "Company") as of December 31, 2021 and 2020, the related consolidated statements of operations and comprehensive loss, stockholders' equity (deficit) and cash flows for the years ended December 31, 2021 and 2020, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America.

Explanatory Paragraph – Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As more fully described in Note 1, the Company has a significant working capital deficiency, has incurred significant losses and needs to raise additional funds to meet its obligations and sustain its operations. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provides a reasonable basis for our opinion.

Critical Audit Matters

Critical audit matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. We determined that there are no critical audit matters.

Marcum LLP

We have served as the Company's auditor since 2018.

New York, NY
March 30, 2022

DELCATH SYSTEMS, INC.
Consolidated Balance Sheets
(in thousands, except share and per share data)

	December 31, 2021	December 31, 2020
Assets		
Current assets		
Cash and cash equivalents	$ 22,802	$ 28,575
Restricted cash	4,151	181
Accounts receivable, net	44	57
Inventories	1,412	855
Prepaid expenses and other current assets	2,743	2,670
Total current assets	31,152	32,338
Property, plant and equipment, net	1,348	1,351
Right-of-use assets	624	946
Total assets	$ 33,124	$ 34,635
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 638	$ 1,774
Accrued expenses	4,109	5,241
Deferred revenue, current	170	525
Lease liabilities, current	416	495
Loan payable, current	621	—
Convertible notes payable, current	—	2,000
Total current liabilities	5,954	10,035
Deferred revenue, non-current	—	2,072
Lease liabilities, non-current	207	450
Loan payable, non-current	10,372	—
Convertible notes payable, non-current	4,639	—
Total liabilities	21,172	12,557
Commitments and contingencies (Note 13)		
Stockholders' equity		
Preferred stock, $.01 par value; 10,000,000 shares authorized; 11,357 and 20,631 shares issued and outstanding at December 31, 2021 and 2020, respectively	—	—
Common stock, $.01 par value; 40,000,000 shares authorized; 7,906,728 and 5,996,101 shares issued and outstanding at December 31, 2021 and 2020, respectively	79	60
Additional paid-in capital	432,831	417,449
Accumulated deficit	(420,976)	(395,327)
Accumulated other comprehensive loss	18	(104)
Total stockholders' equity	11,952	22,078
Total liabilities and stockholders' equity	$ 33,124	$ 34,635

See Accompanying Notes to these Consolidated Financial Statements.

DELCATH SYSTEMS, INC.
Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)

	Years ended December 31,	
	2021	**2020**
Product revenue	$ 1,300	$ 1,156
Other revenue	2,255	490
Cost of goods sold	(671)	(640)
Gross profit	2,884	1,006
Operating expenses:		
Research and development expenses	13,778	11,201
Selling, general and administrative expenses	13,637	11,108
Total operating expenses	27,415	22,309
Operating loss	(24,531)	(21,303)
Change in fair value of the warrant liability, net	—	(2,832)
Interest expense, net	(1,186)	(175)
Other income, net	68	154
Net loss	(25,649)	(24,156)
Deemed dividend for triggering of warrant down round feature	—	(55)
Net loss attributable to common stockholders	$ (25,649)	$ (24,211)
Net loss	$ (25,649)	$ (24,156)
Other comprehensive income (loss):		
Foreign currency translation adjustments	122	(132)
Total other comprehensive loss	$ (25,527)	$ (24,288)
Common share data:		
Basic and diluted loss per common share	$ (3.59)	$ (8.35)
Weighted average number of basic and diluted shares outstanding	7,145,754	2,897,827

See Accompanying Notes to these Consolidated Financial Statements.

DELCATH SYSTEMS, INC.
Consolidated Statements of Stockholders' Equity (Deficit)
(in thousands, except share and per share data)

	Preferred Stock $0.01 Par Value		Common Stock $0.01 Par Value					
	No. of Shares	Amount	No. of Shares	Amount	Additional Paid in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total
Balance at January 1, 2021	20,631	$—	5,996,101	$ 60	$417,449	$(395,327)	$(104)	$ 22,078
Compensation expense for issuance of stock options	—	—	—	—	7,832	—	—	7,832
Shares settled for services	—	—	2,636	—	57	—	—	57
Conversion of preferred stock into common stock	(9,274)	—	927,379	9	(9)	—	—	—
Exercise of warrants into common stock	—	—	465,173	5	2,453	—	—	2,458
Proceeds allocated to warrant	—	—	—	—	1,171	—	—	1,171
Cash issuance costs of warrant	—	—	—	—	(44)	—	—	(44)
Exercise of options into common stock	—	—	439	—	4	—	—	4
Common stock issued in connection with ATM Offering	—	—	515,000	5	3,918	—	—	3,923
Net loss	—	—	—	—	—	(25,649)	—	(25,649)
Total comprehensive income	—	—	—	—	—	—	122	122
Balance at December 31, 2021	11,357	$—	7,906,728	$ 79	$432,831	$(420,976)	$ 18	$ 11,952

DELCATH SYSTEMS, INC.
Consolidated Statements of Stockholders' Equity (Deficit), Continued
(in thousands, except share and per share data)

	Preferred Stock $0.01 Par Value		Common Stock $0.01 Par Value					
	No. of Shares	Amount	No. of Shares	Amount	Additional Paid in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total
Balance at January 1, 2020	41,517	$—	67,091	$ 1	$364,785	$(371,171)	$ 28	$ (6,357)
Compensation expense for issuance of stock options	—	—	—	—	3,505	—	—	3,505
Shares settled for services	—	—	50,013	1	405	—	—	406
Shares settled for accrued compensation	—	—	22,963	—	229	—	—	229
Conversion of preferred stock into common stock	(20,887)	—	2,084,507	20	(20)	—	—	—
Registration costs of Series E and Series E-1 Preferred Stock and related warrants	—	—	—	—	(106)	—	—	(106)
Fair value of warrants reclassified from liability to equity	—	—	—	—	6,199	—	—	6,199
Exercise of warrants into common stock	—	—	191,803	2	1,856	—	—	1,858
Public offering - issuance of common stock and warrants	—	—	1,823,000	18	19,360	—	—	19,378
Common stock issued in connection with ATM Offering	—	—	77,644	1	866	—	—	867
Confidentially Marketed Public Offering - issuance of common stock	—	—	1,679,031	17	20,370	—	—	20,387
Fractional rounding related to reverse stock split	1	—	49	—	—	—	—	—
Net loss	—	—	—	—	—	(24,156)	—	(24,156)
Comprehensive loss	—	—	—	—	—	—	(132)	(132)
Balance at December 31, 2020	20,631	$—	5,996,101	$ 60	$417,449	$(395,327)	$(104)	$ 22,078

See Accompanying Notes to these Consolidated Financial Statements.

DELCATH SYSTEMS, INC.
Consolidated Statements of Cash Flows
(in thousands, except share and per share data)

	Years ended December 31,	
	2021	**2020**
Cash flows from operating activities:		
Net loss	$(25,649)	$(24,156)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock option compensation expense	7,832	3,505
Restricted stock compensation expense	—	406
Depreciation expense	146	167
Non-cash lease expense	322	25
Amortization of debt discount	323	—
Warrant liability fair value adjustment	—	2,832
Non-cash interest income	—	(1)
Interest expense accrued related to convertible notes	186	160
Changes in assets and liabilities:		
Increase (decrease) in prepaid expenses and other assets	813	(910)
Increase (decrease) in accounts receivable	13	(36)
Increase in inventories	(557)	(201)
Decrease in accounts payable	(1,136)	(4,396)
Decrease in accrued expenses	(2,148)	—
Decrease in lease liabilities	(322)	—
Decrease in deferred revenue	(2,427)	(263)
Net cash used in operating activities	(22,604)	(22,868)
Cash flows from investing activities:		
Purchase of property, plant and equipment	(143)	(782)
Net cash used in investing activities	(143)	(782)
Cash flows from financing activities:		
Principal payments of financing leases	—	(26)
Payments related to registration costs	—	(106)
Net proceeds from Public Offerings (1)	—	39,764
Net proceeds from ATM Offering (2)	3,923	866
Fees paid related to preferred stock conversions	—	(1)
Net proceeds from debt financing (3)	14,437	—
Proceeds from the exercise of stock options	4	—
Proceeds from the exercise of warrants	2,458	1,858
Net cash provided by financing activities	20,822	42,355
Foreign currency effects on cash	122	(132)
Net (decrease) increase in total cash	(1,803)	18,573
Total Cash, Cash Equivalents and Restricted Cash:		
Beginning of period	28,756	10,183
End of period	$ 26,953	$ 28,756

(1) - Includes gross proceeds of $44,243, less total issuance costs of $4,479.
(2) - For 2021, includes gross proceeds of $4,044, less total issuance costs of $121.
(2) - For 2020, includes gross proceeds of $910, less total issuance costs of $44.
(3) - Includes gross proceeds of $15,000 less total costs of $563.

DELCATH SYSTEMS, INC.
Consolidated Statements of Cash Flows, continued
(in thousands, except share and per share data)

	Years ended December 31,	
	2021	**2020**
Cash, Cash Equivalents and Restricted Cash consisted of the following:		
Cash	$22,802	$28,575
Restricted Cash	4,151	181
Total	$26,953	$28,756
Supplemental Disclosure of Cash Flow Information:		
Cash paid during the periods for:		
Interest expense	$ 681	$ 11
Supplemental Disclosure of Non-Cash Investing and Financing Activities:		
Conversions of preferred stock into common stock	$ —	$ 21
Shares settled for services	$ 57	$ —
Proceeds allocated to warrant	$ 1,171	$ —
Reclassification of 2019 warrants from liability to equity	$ —	$ 6,200
Right of use assets obtained in exchange for lease obligations	$ —	$ 729
Financing of D&O insurance premium	$ 886	$ 781
Issuance of restricted stock for 2019 bonuses due to executive officers	$ —	$ 230

See Accompanying Notes to these Consolidated Financial Statements.

DELCATH SYSTEMS, INC.
Notes to Consolidated Financial Statements
for the Years Ended December 31, 2021 and 2020
(amounts in thousands, except share and per share amounts)

(1) Description of Business

Delcath Systems, Inc. ("Delcath" or the "Company") is an interventional oncology company focused on the treatment of primary and metastatic liver cancers. The Company's lead product candidate, the HEPZATO™ KIT (melphalan hydrochloride for injection/hepatic delivery system), or HEPZATO™, is a drug/device combination product. HEPZATO is designed to administer high-dose chemotherapy to the liver while controlling systemic exposure and associated side effects. In Europe, Delcath's commercial product is a stand-alone medical device having the same device components as the HEPZATO KIT, but without the melphalan hydrochloride, and is approved for sale under the trade name CHEMOSAT® Hepatic Delivery System for Melphalan, or CHEMOSAT, where it has been used at major medical centers to treat a wide range of cancers of the liver.

Delcath's clinical development program ("CDP") for HEPZATO is comprised of the FOCUS Clinical Trial for Patients with Hepatic Dominant Ocular Melanoma (the "FOCUS Trial"), a global registration clinical trial that is investigating objective response rate in metastatic ocular melanoma, or mOM. The Company is currently reviewing the incidence, unmet need, available efficacy data and development requirements for a broad set of liver cancers in order to select a portfolio of follow-on indications which will maximize the value of the HEPZATO platform.

In the United States, HEPZATO is considered a combination drug and device product regulated by the Food and Drug Administration ("FDA"). Primary jurisdiction for regulation of HEPZATO has been assigned to the FDA's Center for Drug Evaluation and Research. The FDA has granted Delcath six orphan drug designations (five for melphalan in ocular melanoma, cutaneous melanoma, cholangiocarcinoma, hepatocellular carcinoma, and neuroendocrine tumor indications and one for doxorubicin in the hepatocellular carcinoma indication). HEPZATO has not been approved for sale in the United States.

Risks and Uncertainties

Due to the global outbreak of SARS-CoV-2, a novel strain of coronavirus that causes Coronavirus disease (COVID-19), the Company experienced an impact on certain areas of its business. These effects included a slowing of patient recruitment in the FOCUS trial and a reduction in the pace at which the Company can monitor data at its clinical trial sites. The resulting delay in completing enrollment and additional time required to monitor data has caused the Company's planned announcement for the top-line data from its FOCUS Trial to shift to early 2021 and to be modified to a preliminary analysis. The Company now plans to submit a New Drug Application (NDA) to the FDA mid-2022 for the treatment of mOM. The ability to achieve this goal is contingent on the Company's ability to monitor data at its clinical sites and therefore the timeline may shift as access to the clinical sites changes in response to the rapidly evolving situation. The Company also has experienced a decline in EU commercial product revenue and additional impacts to the business may arise that the Company is not aware of currently. The ultimate impact of the pandemic on the Company's results of operations, financial position, liquidity, or capital resources cannot be reasonably estimated at this time.

Although Delcath is not aware of any direct impacts of the war between the Ukraine and the Russian Federation on its supply chain, the war could adversely impact Delcath's ability to obtain components and/or significantly increase the cost of obtaining such components for the Company's products from its third-party suppliers in a timely manner or at all.

Liquidity and Going Concern

The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. As

DELCATH SYSTEMS, INC.
Notes to Consolidated Financial Statements
for the Years Ended December 31, 2021 and 2020
(amounts in thousands, except share and per share amounts)

(1) Description of Business – Continued

Liquidity and Going Concern – Continued

shown in the accompanying consolidated financial statements, during the year ended December 31, 2021, the Company incurred net losses of $25,649 and used $22,554 of cash for its operating activities. These factors among others raise substantial doubt about the Company's ability to continue as a going concern for a reasonable period of time.

The Company's existence is dependent upon management's ability to obtain additional funding sources or to enter into strategic alliances. Adequate additional financing may not be available to the Company on acceptable terms, or at all. If the Company is unable to raise additional capital and/or enter into strategic alliances when needed or on attractive terms, it would be forced to delay, reduce or eliminate its research and development programs or any commercialization efforts. There can be no assurance that the Company's efforts will result in the resolution of the Company's liquidity needs. If the Company is not able to continue as a going concern, it is likely that holders of its common stock will lose all of their investment. The accompanying consolidated financial statements do not include any adjustments that might result should the Company be unable to continue as a going concern.

The Company anticipates incurring additional losses until such time, if ever, that it can generate significant sales. These circumstances raise substantial doubt about the Company's ability to continue as a going concern within one year after the date that the financial statements are issued. Additional working capital will be required to continue operations. Operations of the Company are subject to certain risks and uncertainties, including, among others, uncertainty of product development and clinical trial results; uncertainty regarding regulatory approval; technological uncertainty; uncertainty regarding patents and proprietary rights; comprehensive government regulations; limited commercial manufacturing, marketing or sales experience; and dependence on key personnel.

(2) Basis of Consolidated Financial Statement Presentation

The accounting and financial reporting policies of the Company conform to generally accepted accounting principles in the United States of America ("GAAP"). The preparation of consolidated financial statements in conformity with GAAP requires management to make assumptions and estimates that impact the amounts reported in the Company's consolidated financial statements. The consolidated financial statements include the accounts of all entities controlled by the Company. All significant inter-company accounts and transactions are eliminated.

(3) Summary of Significant Accounting Policies

Use of Estimates

The Company bases its estimates and judgments on historical experience and on various other assumptions that it believes are reasonable under the circumstances. The amounts of assets and liabilities reported in the Company's consolidated balance sheets and the amount of revenues and expenses reported for each of the periods presented are affected by estimates and assumptions, which are used for, but not limited to, the accounting for valuation of warrants, stock-based compensation, valuation of inventory, impairment of long-lived assets, income taxes and operating expense accruals. Such assumptions and estimates are subject to change in the future as additional information becomes available or as circumstances are modified. Actual results could differ from these estimates.

DELCATH SYSTEMS, INC.
Notes to Consolidated Financial Statements
for the Years Ended December 31, 2021 and 2020
(amounts in thousands, except share and per share amounts)

(3) Summary of Significant Accounting Policies – Continued

Cash Equivalents and Concentrations of Credit Risk

The Company considers investments with original maturities of three months or less at date of acquisition to be cash equivalents. The Company has deposits that exceed amounts insured by the Federal Deposit Insurance Corporation; however, the Company does not consider this a significant concentration of credit risk based on the strength of the financial institution.

Restricted Cash

Cash and cash equivalents that are restricted as to withdrawal or use under the terms of certain contractual agreements are recorded as restricted cash on the accompanying consolidated balance sheets.

Accounts Receivable

Accounts receivable, principally trade, are generally due within 30 days and are stated at amounts due from customers. Collections and payments from customers are monitored and a provision for estimated credit losses may be created based upon historical experience and specific customer collection issues that may be identified.

Inventories

Inventories are valued at the lower of cost or net realizable value ("NRV") using the first-in, first-out method. The reported "NRV" of inventory includes finished saleable products, work-in-process, and raw materials that will be sold or used in future periods. The Company reserves for expired, obsolete, and slow-moving inventory.

Property, Plant and Equipment

Property, plant, and equipment are recorded at cost, less accumulated depreciation. The Company provides for depreciation on a straight-line basis over the estimated useful lives of the assets which range from three to seven years. Leasehold improvements will be amortized over the shorter of the lease term or the estimated useful life of the related assets when they are placed into service. The Company evaluates property, plant and equipment for impairment periodically to determine if changes in circumstances or the occurrence of events suggest the carrying value of the asset or asset group may not be recoverable. Maintenance and repairs are charged to operations as incurred. Expenditures which substantially increase the useful lives of the related assets are capitalized.

Fair Value Measurements

The Company adheres to Accounting Standards Codification ("ASC") 820, Fair Value Measurement, which defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. ASC 820 applies to reported balances that are required or permitted to be measured at fair value under existing accounting pronouncements; accordingly, the standard does not require any new fair value measurements of reported balances.

ASC 820 emphasizes that fair value is a market-based measurement, not an entity-specific measurement. Therefore, a fair value measurement should be determined based on the assumptions that

DELCATH SYSTEMS, INC.
Notes to Consolidated Financial Statements
for the Years Ended December 31, 2021 and 2020
(amounts in thousands, except share and per share amounts)

(3) Summary of Significant Accounting Policies – Continued

Fair Value Measurements – Continued

market participants would use in pricing the asset or liability. As a basis for considering market participant assumptions in fair value measurements, ASC 820 establishes a fair value hierarchy that distinguishes between market participant assumptions based on market data obtained from sources independent of the reporting entity (observable inputs that are classified within Levels 1 and 2 of the hierarchy) and the reporting entity's own assumptions about market participant assumptions (unobservable inputs classified within Level 3 of the hierarchy).

- Level 1 inputs utilize quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company can access.
- Level 2 inputs are inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. Level 2 inputs may include quoted prices for similar assets and liabilities in active markets, as well as inputs that are observable for the asset or liability (other than quoted prices), such as interest rates, foreign exchange rates, and yield curves that are observable at commonly quoted intervals.
- Level 3 inputs are unobservable inputs for the asset or liability, which is typically based on an entity's own assumptions, as there is little, if any, related market activity.

In instances where the determination of the fair value measurement is based on inputs from different levels of the fair value hierarchy, the level in the fair value hierarchy within which the entire fair value measurement falls is based on the lowest level input that is significant to the fair value measurement in its entirety. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and considers factors specific to the asset or liability.

Revenue Recognition

Revenue is generated from proprietary and partnered product sales and license and royalty arrangements. Revenue is recognized when or as the Company transfers control of the promised goods or services to its customers in an amount that reflects the consideration to which the Company expects to be entitled to in exchange for those goods or services. When obligations or contingencies remain after the products are shipped, such as training and certifying the treatment centers, revenue is deferred until the obligations or contingencies are satisfied.

Delcath may enter into contracts with partners that contain multiple elements such as licensing, development, manufacturing, and commercialization components. These arrangements are often complex, and the Company may receive various types of consideration over the life of the arrangement, including up-front fees, reimbursements for research and development services, milestone payments, payments on product shipments, margin sharing arrangements, license fees and royalties.

The Company recognizes revenue in accordance with ASC 606, Revenue from Contracts with Customers ("ASC 606"). The core principle of ASC 606 requires that an entity recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASC 606 defines a five-step process to achieve this core principle and, in doing so, it is possible more judgment and estimates may be required within the revenue recognition process, including identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation.

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(3) Summary of Significant Accounting Policies – Continued

Revenue Recognition – Continued

The following five steps are applied to achieve that core principle:

- Step 1: Identify the contract with the customer;
- Step 2: Identify the performance obligations in the contract;
- Step 3: Determine the transaction price, including an estimation of any variable consideration expected to be received in connection with the contract;
- Step 4: Allocate the transaction price to the performance obligations in the contract; and
- Step 5: Recognize revenue when the company satisfies a performance obligation.

Each of these steps in the revenue recognition process requires management to make judgments and/or estimates. The most significant judgements and estimates involve the determination of variable consideration to be included in the transaction price. Variable consideration is recognized at an amount management believes is not subject to significant reversal and is adjusted at each reporting period if the most likely amount of expected consideration changes or becomes fixed. Management believes this provides a reasonable basis for recognizing revenue; however, actual results could differ from estimates and significant changes in estimates could impact the Company's results of operations in future periods.

As required by ASC 606, the Company disaggregates its revenue into the categories of product revenue and other revenue. The Company recognizes product revenue and milestone payments at a point in time, whereas other revenues (primarily license fees) are recognized over time. Milestone payments that are contingent upon the occurrence of future events, are evaluated and recorded at the most likely amount, and to the extent that it is probable that a significant reversal will not occur when the associated uncertainty is resolved. See Note 13 – Commitments and Contingencies – Litigations, Claims and Assessments – medac Matter.

Deferred Revenue

The timing of the Company's revenue recognition may differ from the timing of payment by its customers. A receivable is recorded when revenue is recognized prior to payment and the Company has an unconditional right to payment. Alternatively, when payment precedes the provision of the related services, the Company records deferred revenue until the performance obligations are satisfied. See Note 13 – Commitments and Contingencies – Litigations, Claims and Assessments – medac Matter.

Selling, General and Administrative

Selling, general and administrative costs include personnel costs and related expenses for the Company's sales, marketing, general management and administrative staff, recruitment, costs related to the Company's commercialization efforts in Europe, professional service fees, professional license fees, business development and certain general legal activities. All such costs are charged to expense when incurred.

Research and Development

Research and development costs include the costs of materials used for clinical trials and R&D, personnel costs associated with device and pharmaceutical R&D, clinical affairs, medical affairs, medical science

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(3) Summary of Significant Accounting Policies – Continued

Research and Development – Continued

liaisons, and regulatory affairs, costs of outside services and applicable indirect costs incurred in the development of the Company's proprietary drug delivery system. All such costs are charged to expense when incurred.

Stock Based Compensation

The Company accounts for its share-based compensation in accordance with the provisions of ASC 718, Stock-Based Compensation, which establishes accounting for equity instruments exchanged for services. Under the provisions of ASC 718, share-based compensation is measured at the grant date, based upon the fair value of the award, and is recognized as an expense over the option holders' requisite service period (generally the vesting period of the equity grant). The Company expenses its share-based compensation granted under the accelerated method, which treats each vesting tranche as if it were an individual grant.

The Company periodically grants stock options for a fixed number of shares of common stock to its employees, directors, and non-employee contractors, with an exercise price greater than or equal to the fair market value of the common stock at the date of the grant. The Company estimates the fair value of stock options using an option pricing model. Key inputs used to estimate the fair value of stock options include the exercise price of the option, the expected term, the expected volatility of the stock over the option's expected term, the risk-free interest rate over the option's expected term, and the expected annual dividend yield. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by persons who receive equity awards.

Income Taxes

The Company accounts for income taxes following the asset and liability method in accordance with the ASC 740 "Income Taxes." Under such method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the consolidated financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The Company applies the accounting guidance issued to address the accounting for uncertain tax positions. This guidance clarifies the accounting for income taxes, by prescribing a minimum recognition threshold a tax position is required to meet before being recognized in the financial statements as well as provides guidance on derecognition, measurement, classification, interest and penalties, accounting in interim periods, disclosure, and transition. The Company classifies interest and penalty expense related to uncertain tax positions as a component of income tax expense. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years that the asset is expected to be recovered or the liability settled. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized. The ultimate realization of deferred tax assets depends on the generation of future taxable income during the period in which related temporary differences become deductible. The Company considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in its assessment of a valuation allowance. See Note 14 for additional information.

Net Loss per Common Share

Basic net loss per share is determined by dividing net loss by the weighted average shares of common stock outstanding during the period, without consideration of potentially dilutive securities, except for those

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(3) Summary of Significant Accounting Policies – Continued

Net Loss per Common Share – Continued

shares that are issuable for little or no cash consideration. Diluted net loss per share is determined by dividing net loss by diluted weighted average shares outstanding. Diluted weighted average shares reflects the dilutive effect, if any, of potentially dilutive common shares, such as stock options and warrants calculated using the treasury stock method. In periods with reported net operating losses, all common stock options and warrants are generally deemed anti-dilutive such that basic net loss per share and diluted net loss per share are equal.

For the years ended December 31, 2021 and 2020 the following potentially dilutive securities were excluded from the computation of diluted earnings per share because their effects would be antidilutive:

	December 31,	
	2021	2020
Common stock warrants - equity	3,894,498	4,236,687
Assumed conversion of Series E and Series E-1 Preferred Stock	1,135,721	2,063,100
Assumed conversion of convertible notes	488,031	146,288
Stock options	1,732,460	1,078,499
Total	7,250,710	7,524,574

Segment Information

A single management team that reports to the Chief Executive Officer comprehensively manages the business. Accordingly, the Company does not have separately reportable segments.

Foreign Currency and Currency Translation

Transactions that are denominated in a foreign currency are remeasured into the functional currency at the current exchange rate on the date of the transaction. Any foreign currency-denominated monetary assets and liabilities are subsequently remeasured at current exchange rates, with gains or losses recognized as foreign exchange (losses)/gains in the statements of operations.

The assets and liabilities of the Company's international subsidiaries are translated from their functional currencies into United States dollars at exchange rates prevailing at the balance sheet date. The majority of the foreign subsidiaries revenues and operating expenses are denominated in Euros. The reporting currency for the Company is the United States dollar. Average rates of exchange during the period are used to translate the statement of operations, while historical rates of exchange are used to translate any equity transactions.

Translation adjustments arising on consolidation due to differences between average rates and balance sheet rates, as well as unrealized foreign exchange gains or losses arising from translation of intercompany loans that are of a long-term-investment nature, are recorded in other comprehensive income.

Recently Adopted Accounting Pronouncements

In December 2019, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2019-12, "Simplifying the Accounting for Income Taxes." The list of changes is comprehensive;

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(3) Summary of Significant Accounting Policies – Continued

Recently Adopted Accounting Pronouncements – Continued

however, the changes did not significantly impact the Company due to the full valuation allowance that is recorded against the Company's deferred tax assets. The Company adopted ASU 2019-12 on January 1, 2021, and there was no material impact on the Company's financial statements or disclosures.

In March 2020, the FASB issued ASU 2020-03, "Codification Improvements to Financial Instruments" ("ASU 2020-03"). ASU 2020-03 improves and clarifies various financial instruments topics. ASU 2020-03 includes seven different issues that describe the areas of improvement and the related amendments to GAAP, intended to make the standards easier to understand and apply by eliminating inconsistencies and providing clarifications. The Company adopted ASU 2020-03 upon issuance, which did not have a material effect on the Company's consolidated financial statements.

Recently Issued Accounting Pronouncements

In August 2020, the FASB issued ASU 2020-06, "Accounting for Convertible Instruments and Contracts in an Entity's Own Equity." ASU 2020-06 simplifies the accounting for certain financial instruments with characteristics of liabilities and equity, including convertible instruments and contracts in an entity's own equity. ASU 2020-06 requires entities to provide expanded disclosures about the terms and features of convertible instruments and amends certain guidance in ASC 260, Earnings per Share, relating to the computation of earnings per share for convertible instruments and contracts in an entity's own equity. The guidance becomes effective for the Company on January 1, 2024, with early adoption permitted. The Company early adopted ASU 2020-06 on January 1, 2022 and the adoption is not expected to have any immediate effect on the Company's financial statements. Going forward, the Company will no longer be required to assess convertible instruments for beneficial conversion features.

In October 2020, the FASB issued ASU 2020-10 "Codification Improvements", which improves consistency by amending the Codification to include all disclosure guidance in the appropriate disclosure sections and clarifies application of various provisions in the Codification by amending and adding new headings, cross referencing to other guidance, and refining or correcting terminology. The guidance is effective for the Company beginning in the first quarter of fiscal year 2022 with early adoption permitted. The Company adopted this guidance on January 1, 2022 and it did not have a material impact on its consolidated financial statements.

On May 3, 2021, the FASB issued ASU 2021-04, "Earnings Per Share" (Topic 260), "Debt—Modifications and Extinguishments" (Subtopic 470-50), "Compensation—Stock Compensation" (Topic 718), and "Derivatives and Hedging—Contracts in Entity's Own Equity" (Subtopic 815-40): "Issuer's Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options." This new standard provides clarification and reduces diversity in an issuer's accounting for modifications or exchanges of freestanding equity-classified written call options (such as warrants) that remain equity classified after modification or exchange. This standard is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. Issuers should apply the new standard prospectively to modifications or exchanges occurring after the effective date of the new standard. Early adoption is permitted, including adoption in an interim period. If an issuer elects to early adopt the new standard in an interim period, the guidance should be applied as of the beginning of the fiscal year that includes that interim period. The Company adopted this guidance on January 1, 2022 and it did not have a material impact on its consolidated financial statements.

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(4) Cash, Cash Equivalents and Restricted Cash

Cash and cash equivalents that are restricted as to withdrawal or use under the terms of certain contractual agreements are recorded in *Restricted Cash* on the balance sheet. Restricted cash does not include required minimum balances.

	December 31,	
	2021	2020
Cash and cash equivalents	$22,802	$28,575
Restricted balance for loan agreement	4,000	—
Letters of credit	101	131
Security for credit cards	50	50
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	$26,953	$28,756

Under the terms of a sub-lease agreement for office space at 1633 Broadway, New York, NY, as of December 31, 2021, the Company is required to maintain a letter of credit in the amount of $101, which will expire with the sublease in February 2023.

(5) Inventories

Inventories consist of:

	December 31,	
	2021	2020
Raw materials	$ 767	$435
Work-in-process	645	420
Total Inventory	$1,412	$855

(6) Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets include the following:

	December 31,	
	2021	2020
Clinical trial expenses	$1,630	$1,497
Insurance premiums	890	845
Other	223	328
Total prepaid expenses and other current assets	$2,743	$2,670

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(7) Property, Plant, and Equipment

Property, plant, and equipment consists of:

	December 31, 2021	December 31, 2020	Estimated Useful Life
Buildings and land	$ 1,222	$ 1,109	30 years - Buildings
Enterprise hardware and software	1,858	1,862	3 years
Leaseholds	1,796	1,826	Lesser of lease term or estimated useful life
Equipment	1,094	1,063	7 years
Furniture	203	204	5 years
Property, plant, and equipment, gross	6,173	6,064	
Accumulated depreciation	(4,825)	(4,713)	
Property, plant, and equipment, net	$ 1,348	$ 1,351	

On July 31, 2020, the Company exercised its option to purchase its 95-97 Park Road office location in Queensbury, NY for $460, pursuant to the terms of the lease agreement dated September 17, 2018, as amended.

Depreciation expense for the years ended December 31, 2021 and 2020 was $146 and $167, respectively.

(8) Accrued Expenses

Current accrued expenses include the following:

	December 31, 2021	December 31, 2020
Clinical expenses	$1,517	$2,698
Compensation, excluding taxes	893	1,598
Short-term financing	551	382
Professional fees	603	225
Interest on Rosalind convertible note	393	234
Other	152	104
Total accrued expenses	$4,109	$5,241

(9) Leases

The Company recognizes right-of-use ("ROU") assets and lease liabilities when it obtains the right to control an asset under a leasing arrangement with an initial term greater than twelve months. The Company leases its facilities under non-cancellable operating leases.

The Company evaluates the nature of each lease at the inception of an arrangement to determine whether it is an operating or financing lease and recognizes the ROU asset and lease liabilities based on the present value of future minimum lease payments over the expected lease term. The Company's leases do not generally contain an implicit interest rate and therefore the Company uses the incremental borrowing rate it

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(9) Leases – Continued

would expect to pay to borrow on a similar collateralized basis over a similar term in order to determine the present value of its lease payments.

Pursuant to a 2014 sublease agreement (the "2014 Sublease") and a 2015 sublease agreement (the "2015 Sublease") the Company subleased portions of its leased premises in Galway, Ireland to a sublessee. On May 15, 2020, the Company and its sublessee entered into amendments to the 2014 Sublease and the 2015 Sublease pursuant to which (i) the 2014 Sublease and 2015 Sublease were extended from May 31, 2020 to August 2, 2021, (ii) effective July 1, 2020, the leased premises under the 2015 Sublease would be expanded to include an additional 4,999 square feet of space, and (iii) effective July 1, 2020, the rent under the 2015 Sublease would increase from approximately $14.6 per month to $20.6 per month. The Company analyzed the terms of the amended 2014 Sublease and 2015 Sublease and determined that its ROU asset for the master operating lease was not impaired as a result of the amendments. On June 25, 2020, the Company entered into a sub-lease agreement (the "2021 Sub-Lease") with its previous sublessee under the 2014 Sublease and 2015 Sublease pursuant to which, effective August 2, 2021, the previous sublessee would become the lessee and the Company would then sub-lease its portion of the premises in Galway, Ireland from the previous sublessee. The Company's rent expense under the 2021 Sub-Lease is approximately $3.7 per month for a term of five years.

On September 22, 2020, the Company entered into an amendment to a sub-lease agreement executed in March 2016 for approximately 6,877 square feet of office space at 1633 Broadway, New York, NY. The term of the sub-lease agreement began in April 2016 and, pursuant to the amendment, is extended through February 2023 for total annual base rent of $406.

The following table summarizes the Company's operating leases as of December 31, 2021:

	U.S.	Ireland	Total
Lease cost:			
Operating lease cost	$ 417	$ 147	$ 564
Sublease income	—	(132)	(132)
Total	$ 417	$ 15	$ 432
Other information:			
Operating cash flows out from operating leases	$(417)	$(147)	$(564)
Operating cash flows in from operating leases	$ —	$ 132	$ 132
Right-of-use assets exchanged for new operating lease liabilities	$ —	$ 192	$ 192
Weighted average remaining lease term	1.2	4.6	
Weighted average discount rate - operating leases	8%	8%	

Maturities of the Company's operating leases, excluding short-term leases, are as follows:

	U.S.	Ireland	Total
Year ended December 31, 2022	$406	$46	$452
Year ended December 31, 2023	67	46	113
Year ended December 31, 2024	—	46	46
Year ended December 31, 2025	—	46	46

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(9) Leases – Continued

	U.S .	Ireland	Total
Year ended December 31, 2026	—	27	27
Total	473	211	684
Less present value discount	(25)	(36)	(61)
Operating lease liabilities included in the consolidated balance sheets at December 31, 2021	$448	$175	$623

(10) Loans and Convertible Notes Payable

	December 31,					
	2021			2020		
	Gross	Discount	Net	Gross	Discount	Net
Loan - Avenue [1]	12,638	(1,645)	10,993	—	—	—
Loan - Avenue [1] - Less Current Portion	(714)	93	(621)	—	—	—
Total - Loans Payable, Non-Current	$ 11,924	$(1,552)	$ 10,372	$ —	$—	$ —
Convertible Note Payable - Rosalind	2,000	—	2,000	2,000	—	2,000
Convertible Portion of Loan Payable - Avenue	3,000	(361)	2,639	—	—	—
Total - Convertible Notes Payable - Non-Current	$ 5,000	$ (361)	$ 4,639	$2,000	$—	$ 2,000

[1] The gross amount includes the 4.25% final payment of $637.5.

Remaining maturities of the Company's loan and convertible note payables are as follows:

	Loans	Convertible Notes	Total
Year ended December 31, 2022	$ 714	$ —	$ 714
Year ended December 31, 2023	8,571	—	8,571
Year ended December 31, 2024	3,353	5,000	8,353
Total	$12,638	$5,000	$17,638

Term Loan from Avenue Venture Opportunities Fund, L.P.

On August 6, 2021, the Company entered into a Loan and Security Agreement (the "Avenue Loan Agreement") with Avenue Venture Opportunities Fund, L.P. (the "Lender," or "Avenue") for a term loan in an aggregate principal amount of up to $20,000 (the "Avenue Loan"). The Avenue Loan bears interest at an annual rate equal to the greater of (a) the sum of 7.70% plus the prime rate as reported in The Wall Street Journal and (b) 10.95%. The interest rate at December 31, 2021 was 10.95%. The Avenue Loan is secured by all of the Company's assets globally, including intellectual property. The Avenue Loan matures on August 1, 2024.

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(10) Loans and Convertible Notes Payable – Continued

Term Loan from Avenue Venture Opportunities Fund, L.P. – Continued

The initial tranche of the Avenue Loan is $15,000, including $4,000 which has been funded into a restricted account and will be released upon achievement of (a)(x) positive FOCUS trial efficacy per the trial's predefined Statistical Analysis Plan (SAP) (specifically the Overall Response Rate exceeds the prespecified threshold for success defined in the SAP by a statistically significant amount); and (y) based on data contained within the FOCUS trial database and appropriate for use with the U.S. Food and Drug Administration, safety and tolerability among FOCUS trial participants is within the range of currently approved and commonly used cytotoxic chemotherapeutic agents; and (b) raising subsequent net equity proceeds of at least $20,000. The Company may request an additional $5,000 of gross proceeds between October 1, 2022 and December 31, 2022, with funding, subject to the approval of Avenue's Investment Committee.

Up to $3,000 of the principal amount of the Avenue Loan outstanding may be converted, at the option of Avenue, into shares of the Company's common stock at a conversion price of $11.98 per share.

In connection with the Avenue Loan, the Company issued to Avenue a warrant (the "Avenue Warrant") to purchase 127,755 shares of common stock at an exercise price per share equal to $0.01. The Avenue Warrant is exercisable until August 31, 2026.

The Company will make monthly interest-only payments during the first fifteen months of the term of the Avenue Loan, which could be increased to up to twenty-four months upon the achievement of specified performance milestones. Following the interest-only period, the Company will make equal monthly payments of principal plus interest until the maturity date, when all remaining principal outstanding and accrued interest must be paid. If the Company prepays the Avenue Loan, it will be required to pay (a) a prepayment fee of 3% if the Avenue Loan is prepaid during the interest-only period; and (b) a prepayment fee of 1% if the Avenue Loan is prepaid after the interest-only period. The Company must make an incremental final payment equal to 4.25% of the aggregate funding.

The Company paid an aggregate commitment fee of $150 at closing. Upon funding a second tranche of the Avenue Loan, the Lender will earn a 1.0% fee on the $5,000 of incremental committed capital, for a total commitment fee of $200.

The Avenue Loan Agreement requires the Company to make and maintain representations and warranties and other agreements that are customary in loan agreements of this type. The Avenue Loan Agreement also contains customary events of default, including non-payment of principal or interest, violations of covenants, bankruptcy and material judgments.

The Company determined that the embedded conversion option associated with the Avenue Loan was not required to be bifurcated. The Company determined that the Avenue Warrant met the criteria to be equity-classified. The $637 value of the final payment was treated as original issue discount. The $1,171 relative fair value of the Avenue Warrant was credited to Additional Paid in Capital while it was debited as debt discount. Of the $563 of cash issuance costs, $519 was allocated to the Avenue Loan and was recorded as debit discount, while $44 was allocated to the Avenue Warrant and was debited to Additional Paid in Capital. Of the $2,327 of aggregate debt discount, $1,909 was allocated to the non-convertible portion of the Avenue Loan, while $418 was allocated to the convertible portion of the Avenue Loan. Aggregate debt discount amortization of $323 was recorded during the year ended December 31, 2021, including $265 related to the non-convertible portion of the Avenue Loan and $58 related to the convertible portion of the Avenue Loan. The Company also determined that the convertible portion of the Avenue Loan did not include a beneficial conversion feature, because the effective conversion price exceeded the commitment

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(10) Loans and Convertible Notes Payable – Continued

Term Loan from Avenue Venture Opportunities Fund, L.P. – Continued

date market price of the Company's common stock. Interest expense incurred was $675 for the year ended December 31, 2021.

The Avenue Warrant was valued at issuance at $1,309 using the Black-Scholes option pricing method using the following assumptions:

	August 6, 2021
Contractual term (years)	5.07
Expected volatility	187.0%
Risk-free interest rate	0.77%
Expected dividends	0.00%

Convertible Notes Payable

The Company has $2,000 of principal outstanding related to Senior Secured Promissory Notes (the "Rosalind Notes") which bear interest at 8% per annum. Pursuant to their original terms, the Rosalind Notes were convertible into Series E Preferred Stock at a price of $1,500 per share and were to mature on July 16, 2021. Interest expense was $160 for both years ended December 31, 2021 and 2020.

On August 6, 2021, the Company executed an agreement to amend the Rosalind Notes to (a) reduce the conversion price to $1,198 per share of the Company's Series E Convertible Preferred Stock; and (b) extend the maturity date to October 30, 2024.

In addition, in order to induce the Avenue Venture Opportunities Fund, L.P. to provide the Avenue Loan described above, the holders of the Rosalind Notes agreed to subordinate (a) all of the Company's indebtedness and obligations to the holders; and (b) all of the holders' security interest, to the Avenue Loan and Avenue's security interest in the Company's property.

Up to $3,000 of the principal amount of the Avenue Loan outstanding may be converted, at the option of the Lender, into shares of the Company's common stock at a conversion price of $11.98 per share.

(11) Stockholders' Equity

Authorized Shares

The Company is authorized to issue 10,000,000 shares of preferred stock, $0.01 par value. To date, the Company has designated the following preferred stock: Series A (4,200 shares), Series B (2,360 shares), Series C (590 shares), Series D (10,000 shares), Series E (40,000 shares) and Series E-1 (12,960 shares).

On November 23, 2020, the Company filed a Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company with the Secretary of State of the State of Delaware. The Certificate of Amendment, which became effective immediately upon its filing, decreased the total number of shares of common stock, $0.01 par value, that the Company is authorized to issue from 1,000,000,000 shares to 40,000,000 shares. The Board of Directors of the Company adopted a resolution approving the Certificate of Amendment on September 30, 2020.

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(11) Stockholders' Equity – Continued

Preferred Stock

Series E and Series E-1 Convertible Preferred Stock

During the years ended December 31, 2021 and 2020, 9,274 and 20,887 shares of Series E and Series E-1 Convertible Preferred Stock were converted into 927,379 and 2,084,507 shares of the Company's common stock, respectively.

As of December 31, 2021, there were an aggregate of 11,357 shares of Series E and Series E-1 Convertible Preferred Stock outstanding.

Stock Incentive Plans

The Company's 2019 Equity Incentive Plan (the "2019 Plan") allows for grants in the form of incentive stock options, nonqualified stock options, stock units, stock awards, stock appreciation rights, and other stock-based awards. All of the Company's officers, directors, employees, consultants, and advisors are eligible to receive grants under the 2019 Plan. The 2019 Plan provides for the grant of options to purchase shares of common stock at exercise prices not less than 100% of fair value on the dates of grant. The maximum number of shares reserved for issuance under the 2019 Plan was 2,142. The 2019 Plan has been superseded by the 2020 Plan discussed below and no further awards will be made under the 2019 Plan; however, outstanding awards granted under the 2019 Plan will remain outstanding and continue to be administered in accordance with the terms of the 2019 Plan and the applicable award agreements.

On September 30, 2020, the Company's 2020 Omnibus Equity Incentive Plan (the "2020 Plan") was adopted by the Company's Board of Directors. On November 23, 2020, the Company's stockholders approved the 2020 Plan. The 2020 Plan will continue in effect until the tenth anniversary of the date of its adoption by the Board or until earlier terminated by the Board. The 2020 Plan is administered by the Board of Directors or a committee designated by the Board of Directors. The 2020 Plan provides for the grant of incentive stock options, non-qualified stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance awards, as well as other stock-based awards or cash awards that are deemed to be consistent with the purposes of the plan to Company employees, directors and consultants. As of December 31, 2021, there are 2,475,000 shares of common stock reserved under the 2020 Plan, of which 1,240,600 remained available to be issued.

Equity Offerings and Placements

Confidentially Marketed Public Offering

On December 11, 2020, the Company closed a confidentially marketed public offering with the issuance of 1,679,031 shares of the Company's common stock at a price to the public of $13.25 per share. The Company received gross proceeds of $22,247, offset by $1,860 of underwriting discounts, commissions, and other estimated offering expenses.

At-the-Market Offering

On August 18, 2020, the Company entered into a sales agreement with Cantor Fitzgerald & Co. ("Cantor Fitzgerald"), pursuant to which the Company may offer and sell, from time to time, through Cantor Fitzgerald, as sales agent or principal, shares of the Company's common stock, (the "Placement Shares"),

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(11) Stockholders' Equity – Continued

Equity Offerings and Placements – Continued

At-the-Market Offering – Continued

having an aggregate offering price of up to $10,000 (the "ATM Offering"). The Company has no obligation to sell any Placement Shares under the sales agreement. Subject to the terms and conditions of the sales agreement, Cantor Fitzgerald is required to use commercially reasonable efforts, consistent with its normal trading and sales practices, applicable state and federal law, rules and regulations and the rules of the Nasdaq Stock Market, to sell Placement Shares from time to time based upon the Company's instructions, including any price, time or size limits specified by the Company. The Company will pay Cantor Fitzgerald a commission of 3.0% of the aggregate gross proceeds from each sale of Placement Shares, reimburse Cantor Fitzgerald's legal fees and disbursements up to $50.0 and provide Cantor Fitzgerald with customary indemnification and contribution rights. The sales agreement may be terminated by Cantor Fitzgerald or the Company upon notice to the other party as provided in the sales agreement, or by Cantor Fitzgerald at any time in certain circumstances, including the occurrence of a material and adverse change in the Company's business or financial condition that makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares.

In connection with the ATM Offering, in consideration for a fee equal to 1.05% of the gross sales price per share sold in the ATM Offering, ROTH Capital Advisors, LLC ("Roth") waived, solely with respect to the ATM Offering, (i) Roth's right, pursuant to certain engagement letters dated August 14, 2019 and January 13, 2020 between Roth and the Company, to act as placement agent or underwriter with respect to offerings of the Company's securities and to receive a minimum of 35% of the fees paid to the agents or underwriters for such offerings and (ii) the lock-up provision included in a certain underwriting agreement dated May 1, 2020 between Roth and the Company requiring the prior written consent of Roth for any offer or sale of the Company's common stock by the Company during the 90-day period following the date of such underwriting agreement.

During the year ended December 31, 2021, the Company sold 515,000 shares of common stock pursuant to the ATM Offering for aggregate gross proceeds of $4,044, partially offset by $121 of issuance costs. During the year ended December 31, 2020, the Company sold 77,644 shares of common stock pursuant to the ATM Offering for aggregate gross proceeds of $910, partially offset by $43 of issuance costs.

May 2020 Public Offering

On May 5, 2020, the Company closed a public offering of 1,823,000 shares of common stock, 377,000 pre-funded warrants and Series F warrants to purchase 2,224,900 shares of the Company's common stock at an exercise price of $10.00 per share. The Company received gross proceeds of approximately $21,996 from the public offering, partially offset by $2,618 of underwriting discounts and other offering expenses. As a result of the public offering, the conversion price of the Company's Series E and Series E-1 Convertible Preferred Stock was adjusted to $10.00 per share and the exercise price of the 2019 common stock warrants issued in 2019 to the holders of the Company's Series E and Series E-1 Convertible Preferred Stock was adjusted to $10.00 per share and neither instrument is subject to further price resets. The repricing of the exercise price of the 2019 common stock warrants resulted in the recognition of a $55 deemed dividend. Because the 2019 common stock warrants are no longer subject to price resets, the $6,200 estimated fair value of the warrants was reclassified from derivative liability to equity.

DELCATH SYSTEMS, INC.
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(11) Stockholders' Equity – Continued

Other Common Stock Issuances

During the year ended December 31, 2020, the Company issued 72,976 shares of common stock with an aggregate grant date value of $635 as compensation, including 22,963 shares valued at an aggregate of $229 which were issued to satisfy 2019 accrued compensation.

In February 2021, the Company issued 2,636 shares of unregistered common stock in lieu of a cash payment of deferred accrued director fees to a former director.

During the year ended December 31, 2021, the Company issued 465,173 shares of common stock associated with the exercise of warrants, including 215,000 pre-funded warrants at an exercise price of $0.01 per share, for aggregate cash proceeds of $2,458. During the year ended December 31, 2020, the Company issued 6,000 shares of common stock associated with the exercise of pre-funded warrants and 185,803 shares of common stock associated with other warrants for combined proceeds of $1,858.

Stock Options

The Company values stock options using the Black-Scholes option pricing model and used the following assumptions during the reporting periods:

	Years ended December 31,	
	2021	2020
Expected terms (years)	5.13 - 6.27	5.77
Expected volatility	177.52% - 181.33%	181.00%
Risk-free interest rate	0.74% - 1.31%	0.27% - 0.40%
Expected dividends	0.00%	0.00%

The weighted average estimated fair value of the stock options granted during the years ended December 31, 2021 and 2020 was approximately $9.74 and $11.41 per share, respectively.

The following is a summary of stock option activity for the year ended December 31, 2021:

	Number of Options	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at January 1, 2021	1,078,499	$12.68		
Granted	671,750	10.07		
Exercised	(439)	9.85		
Expired	(392)	11.67		
Cancelled/Forfeited	(16,958)	10.59	—	—
Outstanding at December 31, 2021	1,732,460	$11.69	9.1	$—
Exercisable at December 31, 2021	600,113	$12.08	9.0	$—

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(11) Stockholders' Equity – Continued

Stock Options – Continued

The following table summarizes information for stock option shares outstanding and exercisable at December 31, 2021:

		Options Exercisable	
Range of Exercise Prices	Outstanding Number of Options	Weighted Average Remaining Option Term (in years)	Number of Options
$9.58 - $10.99	631,211	9.6	153,733
$11.00 - $14.99	968,750	8.8	393,481
$15.00 - $24.99	132,000	8.8	52,400
$25 + ...	499	7.1	499
	1,732,460	9.0	600,113

At December 31, 2021, there was approximately $7,406 of aggregate unrecognized compensation expense related to employee and board stock option grants. The cost is expected to be recognized over a weighted average period of 2.01 years. For the years ended December 31, 2021 and 2020, the Company recognized compensation expense $7,832 and $3,505, respectively, related to stock options granted to employees and board members, which were charged to the statement of operations as detailed below:

	Years ended December 31,	
	2021	2020
Selling, general and administrative	$5,334	$2,304
Research and development	2,311	1,110
Cost of goods sold	187	91
Total	$7,832	$3,505

Subsequent to December 31, 2021, the Company made aggregate ten-year option grants to purchase 545,083 shares of common stock with exercise prices ranging from $6.61 to $7.25 per share. Vesting occurs over a three-year period.

Warrants

The following is a summary of warrant activity for the year ended December 31, 2021:

	Warrants	Weighted Average Exercise Price	Weighted Average Remaining Life (Years)
Outstanding at January 1, 2021	4,236,687	$ 9.13	
Warrants issued	127,755	0.01	
Warrants exercised	(469,933)	5.88	
Warrants expired	(11)	10.00	
Outstanding at December 31, 2021	3,894,498	$ 9.27	3.2
Exercisable at December 31, 2021	3,894,498	$ 9.27	3.2

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(11) Stockholders' Equity – Continued

Warrants – Continued

The following table presents information related to stock warrants at December 31, 2021:

		Warrants Exercisable	
Range of Exercise Prices	Outstanding Number of Warrants	Weighted Average Remaining Warrants Term (in years)	Number of Warrants
$0.01	283,755	3.9	283,755
$10.00	3,610,743	3.2	3,610,743
	3,894,498	3.2	3,894,498

See Note 10 for additional information related to the warrant issued to Avenue during the year ended December 31, 2021 and see the May 2020 Public Offering section above for additional information related to the warrants issued during the year ended December 31, 2020.

See the Other Common Stock Issuances section above for additional information related to warrant exercises.

(12) Fair Value Measurements

The table below presents activity within Level 3 of the fair value hierarchy for the year ended December 31, 2020:

	Warrant Liability
Balance at December 31, 2019	$ 3,368
Total change in the liability included in earnings	2,832
Reclass from liability to equity	(6,200)
Balance at December 31, 2020	$ —

See Note 11 for information related to the warrants issued in the year ended December 31, 2019 that were classified as derivative liabilities but were reclassified as equity during the year ended December 31, 2020.

The fair value of the warrants measured during the year ended December 31, 2020 were determined by using option pricing models assuming the following:

	For the Year Ended December 31,
	2020
Contractual life (in years)	4.30
Expected volatility	208.2%
Risk-free interest rates	1.40%

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(13) Commitments and Contingencies

Litigation, Claims and Assessments

Former Officers Matter

Following the May 18, 2020 resignation (effective June 1, 2020) of Jennifer Simpson, the Company's former President and Chief Executive Officer, and Barbra Keck, the Company's former Chief Financial Officer (the "Claimants"), it became evident that there was a dispute regarding the Company's compensation obligations to the Claimants. In a letter dated, June 29, 2020, an attorney representing the Claimants made certain claims and threatened litigation against the Company. On or about July 27, 2020, the Claimants filed a statement of claim with the American Arbitration Association against the Company. The Claimants sought payment of certain purported unpaid compensation amounts claimed to be due to them, in an approximate amount of $1,140 in the aggregate, as well as unspecified statutory damages under New York Labor Law, attorneys' fees and costs, and statutory interest. The Claimants and the Company agreed to participate in non-binding mediation of their dispute before a neutral mediator, which resulted in the arbitration proceedings being placed in abeyance pending the outcome of the mediation process. With the assistance of the neutral mediator and after careful consideration by the Company's board of directors following several weeks of negotiations, the Claimants and the Company agreed in mid-May of 2021 to a confidential settlement of their dispute to avoid the expenses and distractions of further arbitration proceedings, with no admission of liability or wrongdoing on the part of the Company. While the Company had accrued for the full purported unpaid compensation amount of $1,140 as of December 31, 2020, the Company ultimately paid less in full and final settlement of its dispute with both of the Claimants. As a result of the confidential settlement, the AAA Arbitration was dismissed with prejudice on June 1, 2021.

medac Matter

In April 2021, the Company issued an invoice for €1,000 (which currently converts to approximately $1,160) to medac GmbH, a privately held, multi-national pharmaceutical company based in Germany ("medac"), the Company's EU product distribution partner, for a milestone payment due under the License, Supply and Marketing Agreement (the "License Agreement") dated December 10, 2018, between the Company and medac. Pursuant to the License Agreement, a milestone is due upon achieving positive efficacy in the FOCUS trial as defined by the FOCUS trial protocol. Per the trial protocol and associated Statistical Analysis Plan, positive efficacy is based on whether the Objective Response Rate (ORR) exceeds a prespecified threshold. A preliminary analysis of the FOCUS trial data based on 87% of enrolled patients was released on March 31, 2021, and subsequently presented at the American Society of Clinical Oncology (ASCO) Annual Meeting held virtually from the 4th through the 8th of June 2021. Per that analysis, the ORR exceeded the prespecified threshold. While the final ORR is not yet known, given the magnitude by which the ORR exceeded the prespecified endpoint and the small number of patients yet to be assessed, the final ORR will be greater than the prespecified endpoint regardless of the responder status of the remaining patients. medac disagrees that the milestone is due and claims that a full clinical study report is required in addition to the existing ORR analysis. medac has not disputed the accuracy of the ORR analysis or underlying data, but simply asserts that a full clinical study report is required prior to payment. While the Company disagrees with this interpretation, since medac has stated they do not intend to pay the invoice at this time, under revenue recognition criteria set out in ASC 606, the Company cannot recognize the revenue in the year ending December 31, 2021.

On October 12, 2021, the Company notified medac in writing that it was terminating the License Agreement

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(13) Commitments and Contingencies – Continued

medac Matter – Continued

due to medac's nonpayment of the milestone payment due under the License Agreement, with the effective date of termination of the License Agreement being April 12, 2022. medac disputed having an obligation to make a milestone payment under the Agreement and demanded withdrawal of the termination notice. The Company declined to withdraw the termination notice and, on December 16, 2021, the Company initiated an arbitration proceeding pursuant to the dispute resolution provisions of the Agreement. The arbitration proceeding is moving forward with the parties agreeing to stay the arbitration for a finite period to pursue settlement discussions.

On December 30, 2021, the Company received a letter from medac stating that, due to its failure to withdraw the termination notice, medac was terminating the License Agreement with immediate effect. In the letter, medac reserved its rights in full, including a purported claim for damages for wrongful termination. In a separate letter, medac agreed to orderly transition through February 28, 2022 in order to minimize the impact of any termination on patients and physicians. As a result of the early termination of the License Agreement, the Company revised its estimate of the contract life which resulted in an acceleration of $1,742 of revenue recognition associated with deferred revenue.

Officer Appointment – Chief Executive Officer

On October 1, 2020, Gerard Michel was appointed as the Company's new Chief Executive Officer and a Class I Director. Pursuant to an employment agreement dated as of August 31, 2020 between the Company and Mr. Michel (the "Employment Agreement"), the term of Mr. Michel's employment began on October 1, 2020. If Mr. Michel resigns his at-will employment for Good Reason, (as defined in the Employment Agreement), or the Company terminates Mr. Michel's employment other than for Cause, (as defined in the Employment Agreement) , then Mr. Michel shall be entitled to his accrued and unpaid compensation and, subject to him entering into and not revoking a general release of claims in favor of the Company and fully complying with the terms of an Employee Confidentiality, Invention Assignment and Restrictive Covenants Agreement (the "Restrictive Covenants Agreement"), Mr. Michel shall also be entitled to: (a) a severance payment equal in the aggregate to twelve (12) months of his annual base salary at the time of termination, payable in twelve (12) equal monthly installments; and (b) specified continuing health plan benefits until the earlier of (i) the twelve (12) month anniversary of his termination date, (ii) the last day he's eligible for coverage pursuant to COBRA or (iii) the date on which he becomes eligible for similar coverage from another employer.

(14) Income Taxes

There is no income tax provision for the years ended December 31, 2021 and 2020, respectively.

Loss before income taxes consists of:

	For the Years Ended December 31,	
	2021	2020
Domestic	$(25,881)	$(23,643)
Foreign	232	(513)
Loss before taxes	$(25,649)	$(24,156)

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(14) Income Taxes – Continued

The provision for income taxes differs from the amount computed by applying the statutory rate as follows:

	For the Years Ended December 31,	
	2021	2020
Income taxes using U.S federal statutory rate	$(5,386)	$(5,073)
Nondeductible interest	39	315
Loss of tax benefit of state net operating loss carryforwards	2,799	(11)
Branch income	229	(238)
State income taxes, net of federal benefit	311	(1,788)
Foreign rate differential	27	(238)
Valuation allowance	2,114	6,281
Derivative charge	—	595
Stock option expense, exercises and cancellations	446	308
Research and development costs	(375)	(166)
Other	(204)	15
	$ —	$ —

Significant components of the Company's deferred tax assets are as follows:

	For the Years Ended December 31,	
	2021	2020
Deferred tax assets:		
Employee compensation accruals	$ 1,777	$ 796
Accrued liabilities	29	361
Research tax credits	721	346
Lease obligation	107	265
Other	89	87
Net operating losses	20,520	19,742
Total deferred tax assets	23,243	21,597
Deferred tax liabilities:		
Right of use asset	118	265
Total deferred tax liabilities	118	265
Valuation allowance	23,125	21,332
Net deferred tax assets	$ —	$ —

As of December 31, 2021, and 2020, the Company had net operating loss carryforwards for U.S. federal income tax purposes of approximately $277,398 and $260,622, respectively. A significant portion of the federal amount is subject to an annual limitation as low as $28 as a result of changes in the Company's ownership in May 2003, November 2016, and multiple dates throughout 2017, 2018, 2019 and 2021, as defined by Section 382 of the United States Internal Revenue Code of 1986, as amended (the "IRC"), and

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(14) Income Taxes – Continued

the related income tax regulations. As a result of the limitations caused by the multiple ownership changes, approximately $204,458 of the total net operating loss carryforwards is expected to expire unutilized and will be unavailable to offset future federal taxable income. Approximately $72,940 of net operating loss carryforwards remains available to offset future federal taxable income, of which $1,737 will expire between 2022 and 2037 and $71,203 will have an unlimited carryforward period as a result of the Tax Cuts and Jobs Act.

In addition, the Company's state net operating losses are also subject to annual limitations that generally follow the IRC Section 382 provisions (with the exception of Connecticut), adjusted for each state's respective income apportionment percentages. As of December 31, 2021, and 2020, the Company had net operating loss carryforwards for state and city income tax purposes between approximately $24,760 and $193,680 and between approximately $26,414 and $192,466, respectively, which expire through 2041. As a result of the Section 382 limitations, approximately $191,914 and $176,137 of New York State and New York City net operating losses are expected to expire unutilized and will be unavailable to offset future taxable income. Approximately $1,766 and $1,737 of net operating loss carryforwards, respectively, will be available to offset future state and city taxable income. As of December 31, 2021 and 2020 the Company had a net operating loss carryforward for foreign income tax purposes of $27,951 and $30,880, respectively, which have indefinite carryforward periods. As of December 31, 2021 and 2020, the Company had federal research and development tax credit carryforwards of approximately $5,833 and $5,458, respectively, which expire through 2041. As a result of the Section 382 limitations, all but $721 of the tax credit carryforwards is expected to expire unutilized.

Management has established a 100% valuation allowance against the deferred tax assets as management does not believe it is more likely than not that these assets will be realized. The Company's valuation allowance increased by approximately $1,793 and $6,540 in 2021 and 2020, respectively. The change in valuation allowance is as follows:

	December 31,	
	2021	2020
Beginning balance	$21,332	$14,793
Charged to costs and expenses	2,114	6,281
Charged to other comprehensive income	(321)	258
Ending balance	$23,125	$21,332

On March 27, 2020, President Trump signed into law the $2 trillion bipartisan Coronavirus Aid, Relief, and Economic Security (CARES) Act (H.R. 748). The CARES Act includes a variety of economic and tax relief measures intended to stimulate the economy, including loans for small businesses, payroll tax credits/ deferrals, and corporate income tax relief. Due the Company's history of tax loss carryforwards and full valuation allowance, the CARES Act did not have a significant effect to the income tax provision, as the corporate income tax relief was directed towards cash taxpayers.

The Company complies with the provisions of ASC 740-10 in accounting for its uncertain tax positions. ASC 740-10 addresses the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under ASC 740-10, the Company may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The Company has determined that the Company has no significant uncertain tax positions requiring recognition under ASC 740-10 and therefore has not included a tabular roll forward of unrecognized tax benefits. As there are no uncertain tax positions recognized, interest and penalties have not been accrued.

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(14) Income Taxes – Continued

The Company is subject to income tax in the U.S., as well as various state and international jurisdictions. The Company has not been audited by any state tax authorities in connection with income taxes. The Company has not been audited by international tax authorities or any states in connection with income taxes. The Company's New York State tax returns have been subject to annual desk reviews which have resulted in insignificant adjustments to the related franchise tax liabilities and credits. The Company is no longer subject to federal and state examination for tax years ending prior to December 31, 2018; tax years ending December 31, 2018 through December 31, 2021 remain open to examination. The Republic of Ireland is the Company's only significant foreign jurisdiction. The Company is no longer subject to Ireland tax examination for tax years ending prior to December 31, 2017 (as Ireland has not initiated an audit of 2016 as of December 31, 2021); tax years ending December 31, 2017 through December 31, 2021 remain open to examination. However, the Company's tax years December 31, 1998 through December 31, 2021 generally remain open to adjustment for all federal, state and foreign tax matters until its net operating loss and tax credit carryforwards are utilized or expire prior to utilization, and the applicable statutes of limitation have expired in the utilization year. The federal and state tax authorities can generally reduce a net operating loss (but not create taxable income) for a period outside the statute of limitations in order to determine the correct amount of net operating loss which may be allowed as a deduction against income for a period within the statute of limitations.

The Company recognizes interest accrued related to unrecognized tax benefits and penalties, if incurred, as a component of income tax expense.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

The Company's management, with the participation of its Chief Executive Officer, evaluated the effectiveness of the design and operation of its disclosure controls and procedures (as defined in Rule 13a-15(e) or 15d-15(e) of the Exchange Act. Based on that evaluation, the Chief Executive Officer concluded that the Company's disclosure controls and procedures as of December 31, 2021 (the end of the period covered by this Annual Report on Form 10-K), have been designed and are functioning effectively to provide reasonable assurance that the information required to be disclosed by the Company in its reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to the Company's management, including the Chief Executive Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) or 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, the Company's principal executive and principal financial officers and effected by the Company's board of directors, management and other personnel, to provide reasonable assurance regarding reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The Company's management assessed the effectiveness of its internal control over financial reporting as of December 31, 2021. In making this assessment, it used the criteria set forth in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on such assessment, management has concluded that, as of December 31, 2021, the Company's internal control over financial reporting was effective based on those criteria.

Changes in Internal Control Over Financial Reporting

There were no changes to the Company's internal control over financial reporting that occurred during the fourth fiscal quarter ended December 31, 2021 that have materially affected, or are reasonably likely to materially affect, its internal control over financial reporting.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. ***Directors, Executive Officers, and Corporate Governance***

The information required to be furnished pursuant to this Item will be set forth in our proxy statement for the 2022 Annual Meeting of Stockholders of the Company and is incorporated herein by reference.

Item 11. Executive Compensation

The information required to be furnished pursuant to this Item will be set forth in our proxy statement for the 2022 Annual Meeting of Stockholders of the Company and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required to be furnished pursuant to this Item will be set forth in our proxy statement for the 2022 Annual Meeting of Stockholders of the Company and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required to be furnished pursuant to this Item will be set forth in our proxy statement for the 2022 Annual Meeting of Stockholders of the Company and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

The information required to be furnished pursuant to this Item will be set forth in our proxy statement for the 2022 Annual Meeting of Stockholders of the Company and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

The following documents are filed as part of this Annual Report on Form 10-K:

1. ***Consolidated Financial Statements***: The following Consolidated Financial Statements and Supplementary Data and the Report of Independent Registered Public Accounting Firm included in Part II, Item 8:
    - Consolidated Balance Sheets at December 31, 2021 and 2020
    - Consolidated Statements of Operations and Comprehensive Loss for the years ended December 31, 2021 and 2020
    - Consolidated Statements of Stockholders' Equity (Deficit) for the years ended December 31, 2021 and 2020
    - Consolidated Statements of Cash Flows for the years ended December 31, 2021 and 2020
    - Notes to Consolidated Financial Statements
2. ***Exhibits***: The exhibits listed in the accompanying Exhibit Index are filed or incorporated by reference as part of this Annual Report on Form 10-K.

Item 16. Form 10-K Summary.

None.

Exhibit Index

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-1/A filed September 25, 2019).
3.2	Amendment to the Amended and Restated Certificate of Incorporation of the Company dated October 17, 2019 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on October 23, 2019).
3.3	Certificate of Correction to Amendment to the Amended and Restated Certificate of Incorporation of the Company dated October 22, 2019 (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed on October 23, 2019).
3.4	Amendment to the Amended and Restated Certificate of Incorporation of the Company, effective December 24, 2019 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on December 30, 2019).
3.5	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, dated November 23, 2020 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on November 24, 2020).
3.6	Amended and Restated By-Laws of the Company (incorporated by reference to Exhibit 3.2 to Amendment No. 1 to Company's Registration Statement on Form SB-2).
4.1	Certificate of Designation of Preferences, Rights and Limitations of Series E Convertible Preferred Stock of the Company (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed July 11, 2019).
4.2	Certificate of Designation of Preferences, Rights and Limitations of Series E-1 Convertible Preferred Stock of the Company (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed August 16, 2019).
4.3	Form of Series E Warrant to Purchase Shares of Common Stock (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed July 11, 2019).
4.4	Form of Series E-1 Warrant to Purchase Shares of Common Stock (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed August 16, 2019).
4.5	Form of Registration Rights Agreement between the Company and each other party a signatory thereto (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed July 11, 2019).
4.6	Form of Registration Rights Agreement between the Company and each other party a signatory thereto (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed August 16, 2019).
4.7	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.7 to the Company's Amendment No. 1 to the Registration Statement on Form S-1 filed February 7, 2020).
4.8	Form of Warrant Agency Agreement between the Company and American Stock Transfer & Trust Company, LLC, including the form of Series F warrant (incorporated by reference to Exhibit 4.8 to the Company's Registration Statement on Form S-1/A filed on April 20, 2020).
4.9**	Description of Securities.
10.1	Delcath Systems, Inc. 2019 Equity Incentive Plan (incorporated by reference to Exhibit 4.01 to the Company's Current Report on Form 8-K filed on February 7, 2019). #

Exhibit No.	Description
10.2	Delcath Systems, Inc. 2020 Omnibus Equity Incentive Plan, as amended (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2021 filed on August 10, 2021). #
10.3	Employment Agreement dated August 31, 2020, between the Company and Gerard Michel. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on October 1, 2020).
10.4	Inducement Award Stock Option Award Agreement dated October 1, 2020, between the Company and Gerard Michel. (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on October 1, 2020). #
10.5	Employee Confidentiality, Invention Assignment and Restrictive Covenants Agreement, dated August 31, 2020, between the Company and Gerard Michel (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on October 1, 2020). #
10.6	Executive Security Agreement between the Company and John Purpura (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on March 26, 2018). #
10.7	Form of Employee Confidentiality and Restrictive Covenant Agreement (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed September 26, 2011). #
10.8	Form of Indemnification Agreement dated April 8, 2009 between the Company and members of the Company's Board of Directors (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed April 10, 2009).
10.9	Lease dated August 2, 2011 between MBP Co-Ownership Group and Delcath Systems Limited (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2011 filed on November 9, 2011).
10.10	Second Amendment to Sublease, dated September 22, 2020, between the Company and Kasowitz Benson Torres LLP. (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2020 filed on November 12, 2020).
10.11	License, Supply and Marketing Agreement for CHEMOSAT® dated as of December 10, 2018 between the Company and medac Gesellschaft für klinische Spezialpräparate mbH (incorporated by reference to Exhibit 10.38 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed on June 14, 2019).
10.12	Securities Purchase Agreement dated as of July 11, 2019 between the Company and Roth Capital Partners, LLC (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed July 11, 2019).
10.13	Securities Purchase Agreement dated as of August 15, 2019 between the Company and Roth Capital Partners, LLC (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed August 16, 2019).
10.14	Amendment dated as of August 15, 2019 between the Company and each purchaser a signatory thereto to Securities Purchase Agreement dated as of July 11, 2019 between the Company and the purchasers' signatories thereto (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed August 16, 2019).
10.15	Board Appointment Agreement dated as of April 8, 2020 among the Company and the other parties thereto. (incorporated by reference to Exhibit 10.57 of the Company's Registration Statement on Form S-1/A filed on April 20, 2020).

Exhibit No.	Description
10.16	Support and Conversion Agreement dated as of March 11, 2020 among the Company and the other parties thereto (incorporated by reference to Exhibit 10.55 to the Company's Registration Statement on Form S-1/A filed on April 20, 2020), as amended by Amendment to Support and Conversion Agreement dated as of April 8, 2020 among the Company and the other parties thereto (incorporated by reference to Exhibit 10.56 to the Company's Registration Statement on Form S-1/A filed on April 20, 2020).
10.17	Controlled Equity Offering SM Sales Agreement, dated August 18, 2020, between the Company and Cantor Fitzgerald & Co. (incorporated by reference to Exhibit 1.1 of the Company's Current Report on Form 8-K filed on August 18, 2020).
10.18	Underwriting Agreement, dated December 9, 2020, among the Company, Canaccord Genuity LLC and Roth Capital Partners, LLC. (incorporated by reference to Exhibit 1.1 of the Company's Current Report on Form 8-K filed on December 11, 2020).
10.19	Loan and Security Agreement, dated August 6, 2021, between Delcath Systems Inc. as borrow and Avenue Venture Opportunities Fund, L.P., as lender (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed August 11, 2021).
10.20	Supplement to the Loan and Security Agreement, dated August 6, 2021, between the Company as borrower and Avenue Venture Opportunities Fund, L.P., as lender (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed August 11, 2021).
10.21	Warrant to Purchase Shares, dated August 6, 2021, issued by the Company to Avenue Venture Opportunities Fund, L.P. (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed August 11, 2021).
10.22	Second Note Amending Agreement, dated August 6, 2021, between the Company and Rosalind Opportunities Fund I L.P. and Rosalind Master Fund L.P. (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed August 11, 2021).
10.23	Note Amending Agreement, dated as of July 15, 2019, between the Company and Rosalind Opportunities Fund I L.P. and Rosalind Master Fund L.P. (incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed August 11, 2021).
10.24	8% Secured Promissory Note, dated July 15, 2019, issued by the Company to Rosalind Opportunities Fund I L.P. (incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed August 11, 2021).
10.25	8% Secured Promissory Note, dated July 15, 2019, issued by the Company to Rosalind Master Fund L.P. (incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed August 11, 2021).
21**	Subsidiaries of the Company
23.1**	Consent of Independent Registered Public Accounting Firm
24.1	Power of Attorney (included on signature page hereto)
31.1**	Certification by Principal Executive Officer and Interim Principal Accounting Officer Pursuant to Rule 13a 14.
32.1*	Certification of Principal Executive Officer and Interim Principal Accounting Officer Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

Exhibit No.	Description
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File - the cover page XBRL tags are embedded within the Inline XBRL document contained in Exhibit 101

\# Indicates management contract or compensatory plan or arrangement.
* Furnished herewith.
** Filed herewith.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

DELCATH SYSTEMS, INC.

/s/ Gerard Michel

Gerard Michel
Chief Executive Officer
(Principal Executive Officer)
Dated: March 30, 2022

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each of the undersigned constitutes and appoints Gerard Michel as attorney-in-fact and agent, with full power of substitution and re-substitution, for and in the name, place and stead of the undersigned, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as the undersigned might or could do in person, hereby ratifying and confirming all that each of said attorney-in-fact or substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Gerard Michel Gerard Michel	Chief Executive Officer and Director (Principal Executive Officer and Interim Principal Accounting Officer)	March 30, 2022
/s/ Roger G. Stoll, Ph.D. Roger G. Stoll, Ph.D.	Chairman of the Board	March 30, 2022
/s/ Elizabeth Czerepak Elizabeth Czerepak	Director	March 30, 2022
/s/ Steven Salamon Steven Salamon	Director	March 30, 2022
/s/ John R. Sylvester John R. Sylvester	Director	March 30, 2022
/s/ Gil Aharon Gil Aharon	Director	March 30, 2022

EXHIBIT 4.9

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

The following description of our common stock and preferred stock summarizes the material terms and provisions of our common stock and preferred stock. The following description of our capital stock does not purport to be complete and is subject to, and qualified in its entirety by, our Amended and Restated Certificate of Incorporation, as amended, (the "Certificate of Incorporation") and our Amended and Restated By-Laws, as amended, (the "Bylaws") which are exhibits to the Annual Report on Form 10-K filed with the Securities and Exchange Commission, of which this Exhibit forms a part, and by applicable law. The terms of our common stock and preferred stock may also be affected by Delaware law.

Our authorized capital stock consists of:

- 40,000,000 shares of common stock, par value $0.01 per share;
- 10,000,000 shares of undesignated preferred stock, par value $0.01 per share.

As of March 30, 2022, we had (a) 3,894,498 shares of common stock issuable upon the exercise of outstanding warrants, including (i) 1,758,843 Series E and Series E-1 Warrants, (ii) 1,851,900 Series F Warrants, and (iv) 283,755 Pre-funded Warrants at a weighted average exercise price of $9.27 per share and (b) 1,732,460 shares of common stock issuable upon the exercise of outstanding options with a weighted average exercise price of $11.69 per share.

Description of Common Stock

Voting

Holders of our common stock are entitled to one vote per share on matters to be voted on by stockholders and also are entitled to receive such dividends, if any, as may be declared from time to time by our board of directors in its discretion out of funds legally available therefor. Holders of our common stock have exclusive voting rights for the election of our directors and all other matters requiring stockholder action, except with respect to amendments to our Certificate of Incorporation that alter or change the powers, preferences, rights or other terms of any outstanding preferred stock if the holders of such affected series of preferred stock are entitled to vote on such an amendment or filling vacancies on the board of directors.

Dividends

Holders of common stock are entitled to share ratably in any dividends declared by our board of directors, subject to any preferential dividend rights of any outstanding preferred stock. Dividends consisting of shares of common stock may be paid to holders of shares of common stock. We do not intend to pay cash dividends in the foreseeable future.

Liquidation and Dissolution

Upon our liquidation or dissolution, the holders of our common stock will be entitled to receive pro rata all assets remaining available for distribution to stockholders after payment of all liabilities and provision for the liquidation of any shares of preferred stock at the time outstanding.

Other Rights and Restrictions

Our common stock has no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such stock. Our common stock is not subject to redemption by us. Our Certificate of Incorporation and Bylaws do not restrict the ability of a holder of common stock to transfer the stockholder's shares of common stock. If we issue shares of common stock under this prospectus, the shares will be fully paid and non-assessable and will not have, or be subject to, any preemptive or similar rights.

Market Information

Our common stock is traded on the Nasdaq Capital Market under the symbol "DCTH".

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Anti-Takeover Effects of Delaware Law and Our Certificate of Incorporation and Bylaws

Certain provisions of our Certificate of Incorporation and Bylaws could have the effect of making it more difficult for our stockholders to replace management at a time when a substantial number of stockholders might favor a change in management. These provisions include:

- providing for a staggered board; and
- authorizing the board of directors to fill vacant directorships or increase the size of its board of directors.

Furthermore, our board of directors has the authority to issue up to 10,000,000 shares of preferred stock in one or more series and to determine the rights and preferences of the shares of any such series without stockholder approval. Any series of preferred stock is likely to be senior to the common stock with respect to dividends, liquidation rights and, possibly, voting rights. The board's ability to issue preferred stock may have the effect of discouraging unsolicited acquisition proposals, thus adversely affecting the market price of our common stock.

We are not subject to Section 203 of the Delaware General Corporation Law, which prohibits Delaware corporations from engaging in a wide range of specified transactions with any interested stockholder, defined to include, among others, any person other than such corporation and any of its majority owned subsidiaries who own 15% or more of any class or series of stock entitled to vote generally in the election of directors, unless, among other exceptions, the transaction is approved by (i) our board of directors prior to the date the interested stockholder obtained such status or (ii) the holders of two-thirds of the outstanding shares of each class or series of stock entitled to vote generally in the election of directors, not including those shares owned by the interested stockholder.

Staggered Board of Directors

Our Certificate of Incorporation and Bylaws provide that our board of directors be classified into three classes of directors of approximately equal size. As a result, in most circumstances, a person can gain control of our board only by successfully engaging in a proxy contest at two or more annual meetings.

Authorized but Unissued Shares

Our authorized but unissued shares of preferred stock are available for future issuances without stockholder approval and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, corporate acquisitions, employee benefit plans and stockholder rights plans. The existence of authorized but unissued and unreserved preferred stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Description of Preferred Stock

Our board of directors has the authority to issue up to 10,000,000 shares of preferred stock in one or more series and to determine the rights and preferences of the shares of any such series without stockholder approval, of which Series E Preferred Stock and Series E-1 Preferred Stock is outstanding. Our board of directors may issue preferred stock in one or more series and has the authority to fix the designation and powers, rights and preferences and the qualifications, limitations, or restrictions with respect to each class or series of such class without further vote or action by the stockholders. The ability of our board of directors to issue preferred stock without stockholder approval could have the effect of delaying, deferring or preventing a change of control of us or the removal of existing management.

Each share of the Series E Preferred Stock and the Series E-1 Preferred Stock has a par value of $0.01 per share and a stated value equal to $1,000, or the Stated Value, and is convertible at any time at the option of the holder into the number of shares of common stock determined by dividing the stated value by the conversion price of $10.00, subject to certain limitations and adjustments, or the Conversion Price. Except for certain adjustments, the holders of the Series E Preferred Stock and the Series E-1 Preferred Stock will be entitled to receive dividends on such shares equal (on an as if converted basis) to and in the same form as dividends paid on shares of our common stock. Any such dividends that are not paid to the holders of Series E Preferred Stock and the Series E-1 Preferred Stock will increase the Stated Value. No other dividends will be paid on shares of Series E Preferred Stock and Series E-1 Preferred Stock. The Series E Preferred Stock and Series E-1 Preferred Stock will vote on an as converted basis on all matters submitted to the holders of common stock for approval, subject to certain limitations and exceptions. The affirmative vote of the holders of a majority of the then outstanding shares of Series E Preferred Stock and Series E-1 Preferred Stock is required to increase the number of authorized shares of such preferred stock or to alter or change adversely the powers, preferences or rights given to such preferred stock, or to amend the Company's organizational documents in any manner that adversely affects the rights of the holders of such preferred stock. Upon any liquidation of the Company, the holders of Series E Preferred Stock and Series E-1 Preferred Stock will be entitled to receive out of the assets of the Company an amount equal to the Stated Value plus any accrued and unpaid dividends thereon for each share of such preferred stock before any distribution or payment will be made to the holders of the common stock.

EXHIBIT 21

SUBSIDIARIES OF THE REGISTRANT

1. Delcath Holdings Limited, organized under the laws of Ireland.
2. Delcath Systems Limited, organized under the laws of Ireland.
3. Delcath UK Systems Limited, organized under the laws of England.
4. Delcath Systems GmbH, organized under the laws of Germany.
5. Delcath Systems B.V., organized under the laws of the Netherlands.

Exhibit 23.1

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in this Registration Statement of Delcath System, Inc. and Subsidiaries on Form S-1 Amendment No. 3 (File No. 333-233396), Form S-1 Amendment No. 1 (File No. 333-235751), Form S-1 Amendment No. 2 (File No. 333-235904), Form S-1 Amendment No. 2 (File No. 333-236100), Form S-3 (File No. 333-257428), Form S-3 (File No. 333-260097) and Form S-8 (File No. 333-251385) of our report dated March 30, 2022, which includes an explanatory paragraph as to the Company's ability to continue as a going concern, with respect to our audits of the consolidated financial statements of Delcath System, Inc. and Subsidiaries as of December 31, 2021 and 2020 and for each of the two years in the period ended December 31, 2021 which report is included in the Annual Report on Form 10-K of Delcath System, Inc. and Subsidiaries for the year ended December 31, 2021.

/s/ Marcum LLP

Marcum LLP
New York, NY
March 30, 2022

Exhibit 31.1

DELCATH SYSTEMS, INC.

CERTIFICATION
PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Gerard Michel, certify that:

1) I have reviewed this annual report on Form 10-K of Delcath Systems, Inc.;

2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4) The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5) The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

DATE
March 30, 2022

/s/ Gerard Michel
Gerard Michel
Principal Executive Officer and Interim Principal Accounting Officer

Exhibit 32.1

DELCATH SYSTEMS, INC.

CERTIFICATION
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of DELCATH SYSTEMS, INC. (the "Company") for the fiscal year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Gerard Michel, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

DATE
March 30, 2022

/s/ Gerard Michel
Gerard Michel
Principal Executive Officer and Interim Principal Accounting Officer