synairgen plc

Annual Report
and Accounts
2012

Targeting the causes of respiratory disease

When I get a cold...

GAIL, AGED 39
WHO HAS ASTHMA

"I have to take days off work"

GEORGE, AGED 74
WHO HAS COPD

"It wears me down and drains my energy"

POLLY, AGED 16
WHO HAS ASTHMA

"I have to have time off school"

Stock symbol: LSE:SNG
www.synairgen.com

Synairgen is a respiratory drug discovery and development company with a focus on viral defence of the lungs. It is developing inhaled interferon beta ('IFN-β') in two programmes:

- To prevent asthma and COPD patients suffering severe exacerbations as a result of cold or flu infections
- To treat other patients who have been hospitalised with severe viral lung infections

Exacerbations (acute deteriorations of symptoms) represent the greatest unmet clinical need in asthma and COPD. The common cold plays a major role in exacerbations, causing up to 80% of asthma exacerbations. For COPD patients 50% of colds result in exacerbations. The annual direct healthcare cost of treating asthma and COPD is very significant. In the USA it amounts to $54 billion[1], of which $16 billion is for hospitalisations and Emergency Room visits.

Viruses are parasites which take over cells and use the cells' 'machinery' to replicate. The normal host cell response to viral infection is to trigger IFN-β production, which in turn orchestrates an anti-viral response (see page 10). Deficiencies in IFN-β production following infection explain why some patient groups (such as those with asthma and COPD) are more susceptible to infection. Many pathogenic respiratory viruses, such as influenza and SARS, can suppress IFN-β production, allowing infections to spread to the lungs and cause severe illness.

By delivering IFN-β to the lungs, Synairgen aims to overcome the IFN-β deficiency and restore/boost the lungs' anti-viral defence mechanism.

Patents protecting the use of inhaled IFN-β to treat exacerbations of asthma and COPD induced by rhinovirus (the common cold) have been granted in the USA, the EU and Japan.

In 2012 Synairgen announced positive data from its Phase II proof of concept trial of inhaled IFN-β in asthma and is aiming to secure the right partnership arrangement to enable commencement of follow-on clinical trial activity during the 2013-14 virus season.

www.synairgen.com

Reference

1. *National Heart, Lung, and Blood Institute. Morbidity & Mortality: 2012 Chart Book on Cardiovascular, Lung, and Blood Diseases.*

Contents

I have suffered with asthma since I was 10 years old. I lead a very normal life (swim 3 times a week and run regularly) until I get a cold. When I get a cold it goes straight to my chest and I get very wheezy and have to take my inhaler about 20 times a day. I usually end up on oral steroids and/or antibiotics when I have a cold and have to have days off work. *My colds seem to last a lot longer than any of my friends, and I often feel as though the entire winter is spent with a bad chest and not leading a normal life. Asthma is a chronic condition but it doesn't affect my life until I get a cold.*

Gail aged 39

Highlights for the year ended 31 December 2012

Operational highlights

- Positive data announced in April 2012 from the Phase II proof of concept trial of inhaled interferon beta (SNG001) being developed for the treatment or prevention of virus-induced asthma exacerbations, which showed:
  - British Thoracic Society Step 4/5 patients (estimated to represent between 10% and 20% of adult asthma sufferers, who are the greatest healthcare burden) suffer most due to cold viruses
  - Significant benefit across multiple endpoints in the Step 4/5 population
  - Inhaled interferon beta is well tolerated
- The positive Phase II clinical trial data triggered comprehensive business development activity. Multiple parties are conducting detailed technical and commercial evaluations of SNG001. We aim to finalise arrangements with a primary partner to enable commencement of follow-on clinical trial activity during the 2013 – 2014 virus season
- Biomarker analysis of Phase II study samples commenced
- We are continuing to map out the different regulatory and clinical paths required to progress SNG001 to market in asthma and COPD. This is being progressed in parallel with our business development discussions
- We have commenced engagement with the US government to investigate the potential of SNG001 as a broad spectrum anti-viral treatment
- Expansion of patent portfolio, including grant of US patent for compounds that induce interferon beta to treat or prevent rhinovirus (common cold)-induced exacerbations in asthma or COPD

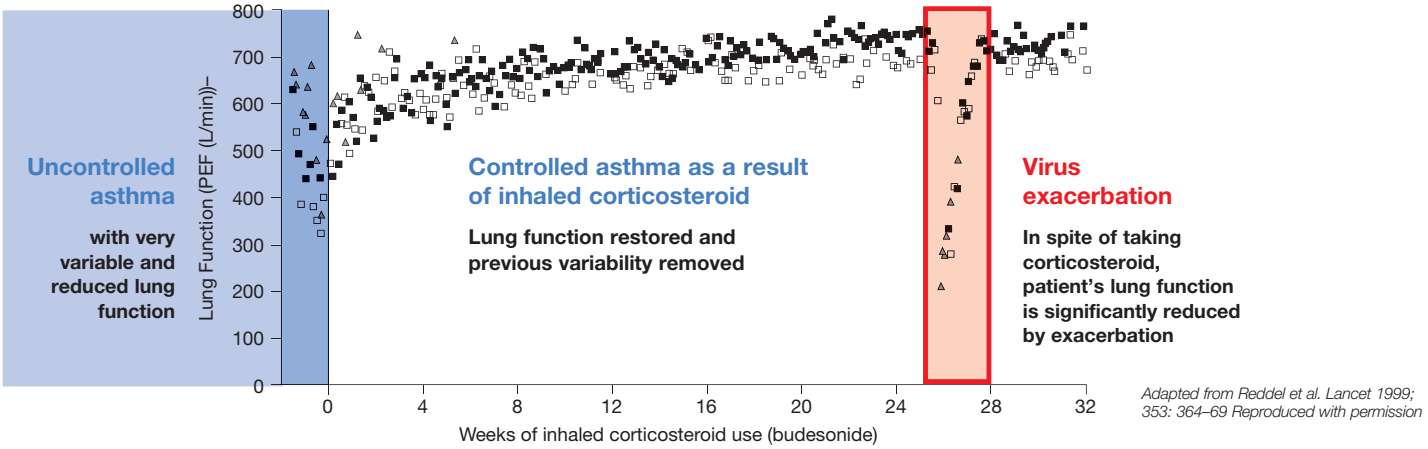
Financial highlights

- Balance sheet strengthened with fundraising of £2.5 million (gross) completed in July 2012
- Research and development expenditure for the year: £1.5 million (six months ended 31 December 2011: £1.8 million)
- Post-tax loss for the year: £2.3 million (six months ended 31 December 2011: £2.0 million)
- Cash at 31 December 2012: £3.1 million (31 December 2011: £3.4 million)

Chairman's and Chief Executive Officer's Report

This has been a pivotal year for Synairgen, as its primary programme, SNG001 (inhaled interferon beta) to treat or prevent exacerbations of asthma and COPD, has produced positive Phase II clinical trial data. We also raised further funds to strengthen the balance sheet whilst we explore partnering opportunities.

Exacerbations cause loss of lung function even whilst on 'gold standard' inhaled corticosteroid therapy



Adapted from Reddel et al. Lancet 1999; 353: 364–69 Reproduced with permission

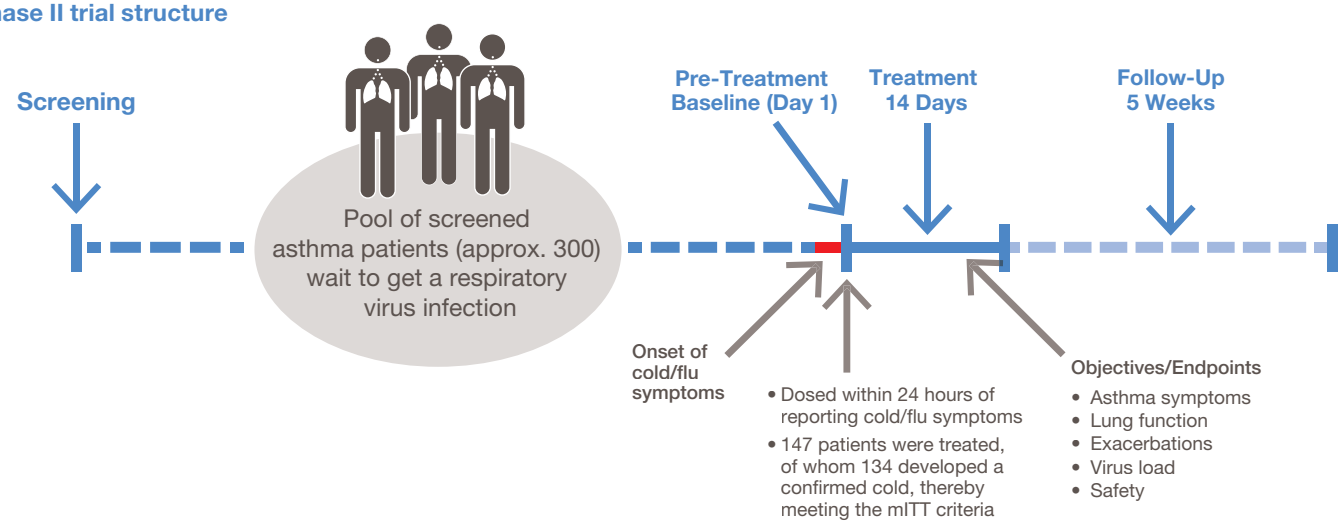
Synairgen's inhaled SNG001 is being developed as a broad spectrum anti-viral therapy to be taken by asthmatic and COPD patients at the onset of cold (or influenza) symptoms. It is designed to treat and/or attenuate a deterioration of asthma or COPD symptoms and prevent severe exacerbations that require intensive treatment with oral therapies such as steroids or antibiotics. It has long been established that common viruses are a major cause of exacerbations and hospitalisations in these diseases. The rationale for developing inhaled SNG001 came from the observation that cells from asthmatic patients and COPD patients' lungs respond poorly to viruses, and do not produce enough of the key anti-viral protein interferon beta. Adding interferon beta to the cells restores and boosts the anti-viral defences.

When I get a cold it lasts a couple of days and then goes, then a few days later it hits me again and that's when my chest is really bad. I cough a lot more than usual and have a lot of mucus. It is much worse when I get up. I can't do a great deal, especially in the morning, and then it gets better as the day goes on. I have to take my inhalers more regularly. *I don't like going to the doctors and it takes me a long time to get an appointment. They often give me steroids and antibiotics. I just feel drained and it takes me a long time to get back to normal again. I haven't really been back to normal since Christmas. It wears me down and drains my energy.*

George aged 74

Chairman's and Chief Executive Officer's Report (continued)

Phase II trial structure



Results of Phase II trial

In April we announced preliminary results from the trial. Since then we have continued to review the mass of data generated by this study alongside key opinion leaders in the field. The results were presented by Prof. Ratko Djukanovic at the European Respiratory Society in September 2012 and were well received. The results have also recently been submitted for publication.

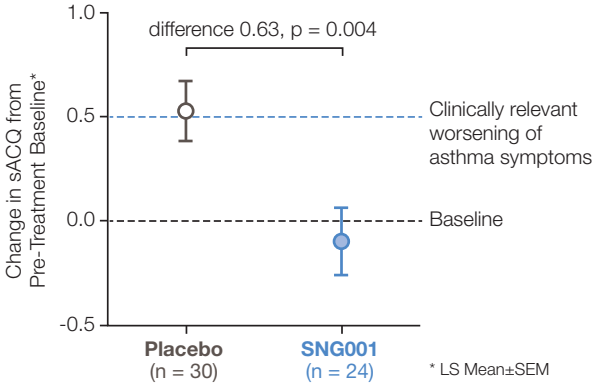
In the trial, 147 patients with a wide range of asthma severity were treated with either SNG001 or placebo at the early signs of a cold infection. Of the 147, 134 went on to develop a full cold (the other 13 patients either did not provide data to be able to confirm a cold, or the cold symptoms did not materialise).

Various endpoints were assessed to establish whether SNG001 was providing benefit to these asthmatic patients during respiratory virus infections. The primary endpoint was a measure of change in asthma symptoms during the first week of treatment using the shortened Asthma Control Questionnaire (sACQ). In the treated population who got colds, there appeared to be minimal benefit. Essentially the cold infection was not impacting on patients' asthma as seriously as expected, thus there was little opportunity for an intervention to demonstrate efficacy and there was no statistically significant difference. However for lung function (morning peak expiratory flow, a secondary/exploratory endpoint) there was a statistically significant benefit for patients receiving SNG001. This in itself is very encouraging.

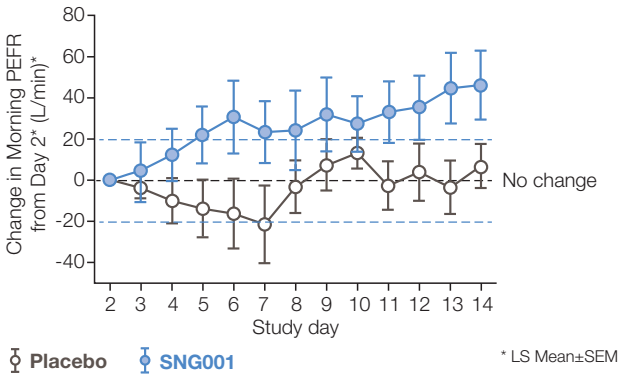
A review of patients whose asthma deteriorated to the point where they were prescribed oral steroids (or antibiotics) to treat their exacerbation showed that five patients receiving placebo and one patient receiving SNG001 required this more serious level of intervention to treat their asthma exacerbation. One of the patients on placebo was hospitalised for five days for their asthma.

Of particular interest to us was that all five of the placebo patients who received oral corticosteroids or antibiotics to treat their exacerbation were in the British Thoracic Society (BTS) Step 4 classification. The BTS Step classification system ranges from 1 to 5, with Step 1 patients being least intensively treated to Step 5 being the most intensively treated. BTS Step 4 patients, who are recognised as 'difficult to treat', receive close to maximal routine inhaled therapies (i.e. higher doses of inhaled corticosteroids - an anti-inflammatory - and a long acting beta agonist (bronchodilator) as a minimum). None of the Step 4 or Step 5 SNG001-treated patients required this higher level of intervention (i.e. oral steroids or antibiotics). This led us to investigate the possibility that this population may be the patient group who not only suffer most during respiratory virus infections, but also respond best to SNG001 treatment.

Change in sACQ from Pre-Treatment Baseline to Day 8 in BTS Step 4/5 Group (mITT)



Change in Home Morning Peak Expiratory Flow Rate from Day 2 in BTS Step 4/5 Group (mITT)



Analysis of sub populations according to BTS Step group

The first observation was that there were disproportionately more (approaching half) Step 4 and Step 5 patients in the trial than one would find in the general asthma population, where 10% to 20% would be expected. We believe the trial radio advert recruitment wording, "Does your asthma get worse when you get a cold?", created a positive bias that resulted in the selection of patients whose asthma deteriorates most when they get a cold.

An assessment of asthma control using the sACQ (as used for the primary endpoint) showed that in the first week of the cold there was a marked worsening in patients on placebo, whereas patients on SNG001 showed a movement returning towards their screening (uninfected) level of control. The difference on the sACQ scale of 0.63 in favour of SNG001 exceeded the threshold considered to be clinically relevant (> 0.5) and was statistically significant (p=0.004).

A similar subgroup analysis of the lung function (morning peak expiratory flow) changes, which were significantly better for the overall population in the trial (as referred to above), showed that the positive effects of SNG001 were minimal for the 'milder' Step 2 patients (difference of 6 litres/min), approaching clinical relevance (17 litres/min) for the Step 3 patients, and exceeding the clinically relevant difference of 20 litres/min in the Step 4 patients (31 litres/min).

This trial has been successful on three counts:

- Firstly, we have identified the patient group which appears to suffer most due to cold viruses; this is the Step 4 and Step 5 patients. Patients at lower Steps have other therapeutic options: they have greater scope to increase the doses of their existing routine daily medication, and it is also quite possible that compliance to medication may increase at times of infection.
  It appears that Step 4 patients are more likely to use more potent drugs, such as oral corticosteroids.
- Secondly, in these Step 4/5 patients, treatment with SNG001 was beneficial in terms of the number of patients requiring oral therapies, improvement in asthma control, and accelerating the recovery in lung function.
- Thirdly, SNG001 appears to be well tolerated, and there was no evidence of systemic absorption.

Chairman's and Chief Executive Officer's Report (continued)

Business Development
The positive data from the Phase II clinical trial has triggered comprehensive business development activity. This process has identified multiple parties with established commercial respiratory franchises who are interested in this therapeutic area. During the period, we have devoted significant time and resource to enable potential partners to conduct technical and commercial evaluations of SNG001. Given the novelty of this potential treatment we have worked up a number of options regarding clinical and regulatory development pathways for SNG001. We aim to secure the right partnership arrangement to enable commencement of follow-on clinical trial activity during the 2013 – 2014 virus season and we are confident that this process can achieve that goal.

Biomarker analysis of Phase II samples
We are also progressing well with the analysis of samples from our Phase II study in asthma. A panel of possible gene and protein biomarkers have been identified and are the subject of further investigations. We shall provide updates on this activity which is designed to underpin the clinical observations, and also identify potential prognostic biomarkers.

Clinical development plan
We are making very good progress with regard to preparation of materials (e.g. protocols) for follow-on studies in asthma and COPD. These are being progressed in parallel with our business development discussions. Each potential partner has a slightly different view on how this should be progressed, but all are still valid approaches for this innovative programme.

Intellectual property
During the year, a US patent was granted for compounds that induce interferon beta to treat or prevent rhinovirus (common cold)-induced exacerbations in asthma or COPD. This is important intellectual property for the Company, as it prevents inducers of interferon beta, such as toll-like receptor agonists, being developed to do the same role as SNG001.

Severe viral lung infections
We submitted an application to the US National Institutes of Health to support activity that will progress inhaled SNG001 towards the non-asthma, non-COPD market, which is to treat patients hospitalised with severe viral lung infections. We expect to hear whether we have been successful during this summer.

In summary
In 2012 our interferon beta programme achieved a significant milestone, generating persuasive efficacy data within the group of asthma patients that we are seeking to treat. We are now planning the further development of this exciting therapy and are focussed on securing the right partnership to help us deliver it.

Simon Shaw
Chairman

Richard Marsden
Chief Executive Officer

12 February 2013

Financial Review

The Financial Review should be read in conjunction with the consolidated financial statements of the Company and Synairgen Research Limited (together the 'Group') and the notes thereto on pages 25 to 38. The consolidated financial statements are presented under International Financial Reporting Standards as adopted by the European Union. The financial statements of the Company continue to be prepared in accordance with UK Generally Accepted Accounting Practice and are set out on pages 39 to 42. During the previous accounting period, the Group brought forward its financial year-end from 30 June to 31 December and as a result comparative financial information in this annual report is for the six months ended 31 December 2011.

Statement of Comprehensive Income

The loss from operations for the year ended 31 December 2012 was £2.49 million (six months ended 31 December 2011: £2.24 million). Research and development expenditure for the year amounted to £1.51 million (six months ended 31 December 2011: £1.82 million). The proportionate reduction in research and development expenditure was due to the completion early in the year of both the asthma Phase II study (SG005) and the pre-clinical study in viral pneumonia. The most significant item of continuing research and development during the year has been the analysis of data and samples collected from SG005.

Other administrative costs for the year amounted to £0.98 million (six months ended 31 December 2011: £0.42 million). The research and development tax credit for the year, in line with the reduction in expenditure, was £0.21 million (six months ended 31 December 2011: £0.25 million). The loss after tax for the year was £2.25 million (six months ended 31 December 2011: £1.97 million) and the loss per share was 3.12p (six months ended 31 December 2011: loss of 2.83p).

Fundraising

In July 2012, the Company raised £2.50 million (gross) through the issue of 5.56 million shares at a price of 45p per share. Costs of the issue amounted to £0.15 million (6.0%).

Statement of Financial Position and cash flows

At 31 December 2012, net assets amounted to £3.42 million (31 December 2011: £3.12 million), including net funds, as detailed below in Capital structure and funding, of £3.09 million (31 December 2011: £3.35 million).

The principal elements of the £0.26 million decrease over the year ended 31 December 2012 (six months ended 31 December 2011: £1.54 million decrease) in net funds were:

- Cash used in operations of £2.75 million (six months ended 31 December 2011: £1.93 million outflow);
- Research and development tax credits received of £0.25 million (six months ended 31 December 2011: £0.40 million);
- Investment into intangible assets (patents and licences) £0.14 million (six months ended 31 December 2011: £0.02 million); and
- Share issue proceeds (net of costs) £2.35 million (six months ended 31 December 2011: £nil).

Treasury policy and financial risk management

Credit risk

The Group follows a risk-averse policy of treasury management. Sterling deposits are held with one or more approved UK-based financial institutions. The Group's primary treasury objective is to minimise exposure to potential capital losses whilst at the same time securing prevailing market rates.

Interest rate risk

The Group's cash held in current bank accounts is subject to the risk of fluctuating base rates. A substantial element of the Group's financial assets is placed on fixed-term interest deposits. The interest rate profile of financial assets is illustrated in note 16 to the financial statements.

Currency risk

During the year under review, the Group was exposed to Euro and Australian dollar exposure as a small element of its research and development expenditure is denominated in these currencies. The Group does not routinely hedge against this exposure.

Capital structure and funding

The Group is funded by equity capital, reflecting the early stage nature of its discovery and development programmes.

The Group considers its capital to be its total equity, which at 31 December 2012 amounted to £3.42 million (31 December 2011: £3.12 million). The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns to equity holders of the Company and benefits to other stakeholders and to maintain an optimal capital structure to reduce the cost of capital. The Group manages this objective through tight control of its cash resources and, upon reaching significant drug development programme milestones (to decrease investment risk), by raising additional equity from shareholders to meet its forecast future cash requirements.

Net funds held by the Group at 31 December 2012 amounted to £3.09 million and comprised cash and cash equivalents, short-term deposits (with original maturities of greater than three months and less than one year) as shown below:

	31 Dec				30 June
	2012 £m	2011 £m	2011 £m	2010 £m	2009 £m
Short-term deposits	1.43	2.45	3.40	3.68	1.98
Cash and cash equivalents	1.66	0.90	1.49	1.33	5.96
Net funds	3.09	3.35	4.89	5.01	7.94

The Group did not have any bank borrowings as at 31 December 2012 (31 December 2011: £nil).

There have been five significant issues of shares with the following amounts (net of costs) raised: £0.62 million (August 2003); £8.98 million (from IPO on AIM in October 2004); £6.20 million (June 2009); £2.50 million (June 2011); and £2.35 million (July 2012). The other major sources of funding received by the Group from the formation of the business until 31 December 2012 have been: research and development tax credits of £2.22 million, bank interest of £1.60 million, and revenues from collaborative work of £0.60 million.

John Ward
Finance Director

12 February 2013

Scientific Review – The key role of interferons in defending the body against infection

Interferons ('IFNs') are proteins made and released by cells as part of the body's immune response to infection and cancer. Historically IFNs were named because of their ability to 'interfere' with viral replication within cells[1].

There are three types of IFN, each type activates different receptors on the surface of cells resulting in different biological responses. Type I IFNs (IFN-α and IFN-β) are essential for immunity against most viruses. The more recently identified Type III IFNs (IFN-λ 1, IFN-λ2 and IFN-λ3) also play a role in anti-viral defence, although their relative importance to Type I IFNs is still to be fully understood. IFN-γ is the only Type II IFN and it is important for immunity against bacteria, fungi, and parasites.

Defects in the production of, or response to, IFNs are associated with an increased susceptibility to infection. For example, mice lacking the Type I IFN are highly susceptible to infection with a range of viruses despite an otherwise intact immune system[2]. Similarly, people with genetic defects in IFN pathways are prone to serious life-threatening infections[3].

Anti-viral activities of Type I IFNs

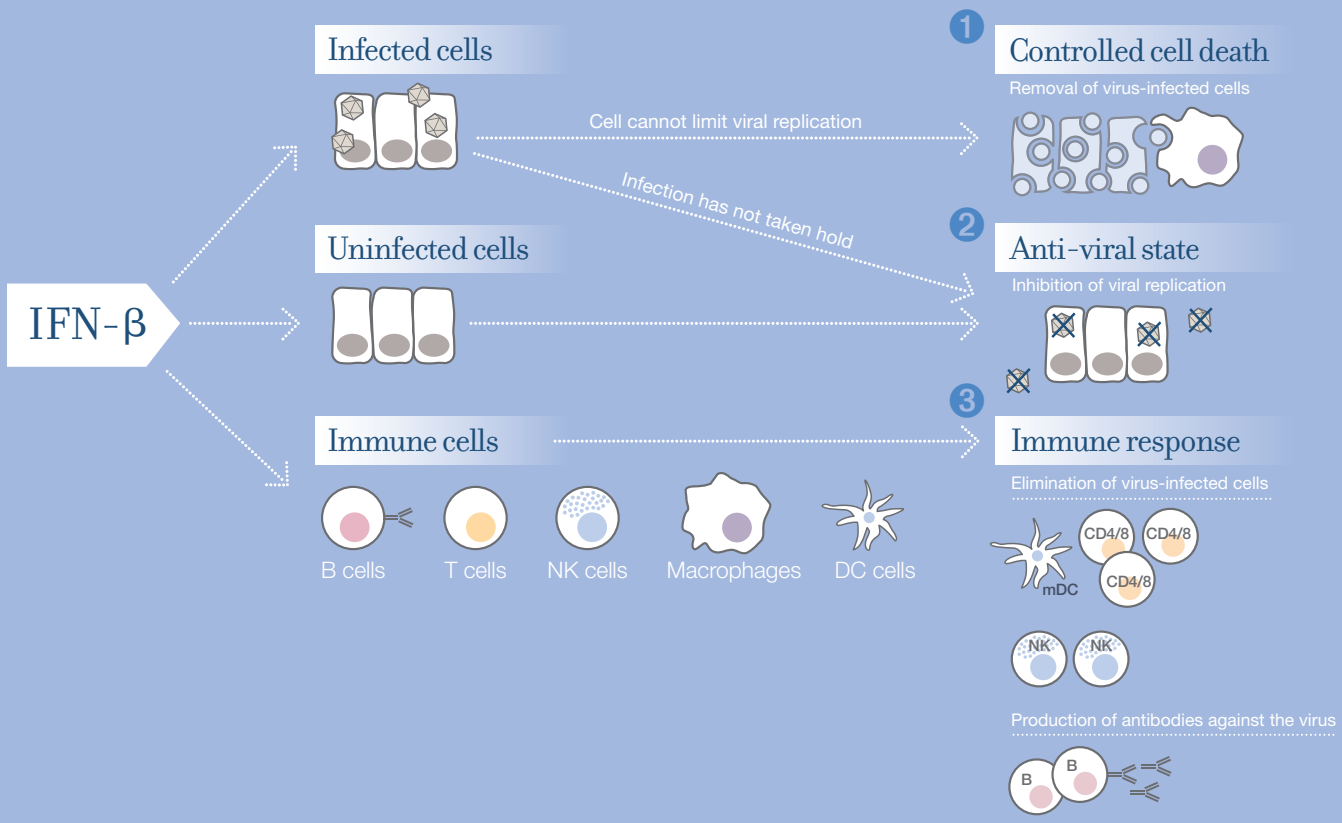
Viruses are microscopic organisms consisting of genetic material (RNA or DNA) surrounded by a protein coat. They are not capable of replicating on their own (unlike bacteria) and so have to invade cells and 'hijack' their replication machinery. After latching onto a cell, a virus will insert its genetic material into the cell and direct it to make copies of the viral genetic material, structural components and the enzymes needed to produce and assemble new virus particles (virions). Having made many thousands of new virions, the cell finally dies, releasing the new viral particles, which can then infect surrounding cells.

Synairgen is developing an inhaled form of IFN-β. IFN-β plays an indispensable role in limiting viral infection within the body. Production and release of IFN-β is triggered when viral genetic material is detected by receptors inside cells. IFN-β can then bind to and activate Type I IFN receptors on the surface of nearby cells, resulting in the 'switching on' of hundreds of Interferon Stimulated Genes ('ISG'), including Type I IFN genes, which orchestrate the anti-viral response within cells and the wider immune response to infection (Figure 1).

Prof. Stephen Holgate
Non-executive Director

Dr Phillip Monk
Chief Scientific Officer

Figure 1. Anti-viral activities of IFN-β



1. In cells which cannot limit viral replication IFN-β causes controlled cell death or 'cell suicide' in a process known as apoptosis. By dying, the cell can no longer support viral replication, thus limiting the spread of the infection. Cells which die by apoptosis can be cleared by immune cells (macrophages) without causing further inflammation.

2. In uninfected cells and infected cells in which the infection has not yet taken hold, IFN-β switches the cell into an 'Anti-viral State' by driving the expression of numerous Interferon Stimulated Genes (ISG) products that act together to limit replication of many different virus types. By switching on anti-viral defences in surrounding uninfected cells IFN-β prevents the spread of the infection.

3. IFN-β and ISG products also have additional beneficial effects on the wider immune response including promoting the recruitment of immune cells (NK cells and $CD8^+$ T-cells) to the site of infection to eliminate virus infected cells and mechanisms leading to the production of antibodies against virus (by B-cells) which prevent the virus binding to and infecting cells. Antibodies not only limit the ongoing infection but can also provide long lasting immunity against the virus.

Scientific Review – The key role of interferons in defending the body against infection (continued)

Type I IFNs as anti-viral treatments

Recognising the potential of Type I IFNs to modify the body's immune response, a number of man-made mimics have been successfully developed as drugs. These include a number of injectable IFN-α related products (such as Intron-A®, Roferon®, Infergen®, Pegasys® and Pegintron®) that have been developed as anti-virals for the treatment of hepatitis and/or treatments for cancers. Injectable IFN-β related products have been developed as treatments for the nervous system disease multiple sclerosis ('MS'), these include Rebif®, Avonex®, Betaferon®/Betaseron® and Extavia®. MS is a disease in which the nerves of the brain and spinal cord are mistakenly targeted by the immune system. The way IFN-β works in MS in not fully understood but it is believed to involve modulation of the immune response resulting in reduced inflammation and damage[4].

Inhaled IFN-β as a treatment for virus induced exacerbations of respiratory disease

Respiratory virus infections such as the common cold and influenza are strongly associated with exacerbations of respiratory diseases such as asthma, chronic obstructive pulmonary disease (COPD) and cystic fibrosis. There is growing evidence that this association can be explained by a local increase in susceptibility to viral infection in the lungs of these patients, caused by a deficiency to produce IFN-β in response to a viral infection[5-10].

In the laboratory it has been observed that the addition of small amounts of human IFN-β to lung cell cultures from patients with chronic respiratory disease can restore their anti-viral responses and protect cells from respiratory viruses associated with asthma exacerbations (especially rhinoviruses but also others such as respiratory syncytial virus and influenza). These findings have been translated to clinical application by Synairgen to see if IFN-β can be used as a potential treatment for virus-induced exacerbations of chronic lung disease. In our recent clinical trial we found that when compared to placebo, the administration of inhaled IFN-β could prevent worsening asthma symptoms and exacerbations, and improve lung function in "more difficult to treat" asthmatics suffering from an upper respiratory tract infection (such as the common cold). Thus, by administering IFN-β directly to the lungs of asthmatics we could correct the deficiency and restore anti-viral defences thus preventing the spread of the infection and worsening lung inflammation. Further clinical studies are planned to confirm the result of this study in asthma and explore the potential of adopting a similar approach in COPD.

Professor Stephen Holgate CBE
Founder and Non-executive Director

Dr Phillip Monk
Chief Scientific Officer

12 February 2013

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My name is Polly and I have suffered with asthma for 12 years. When I get a cold I get bad asthma and sometimes a chest infection. I tend to start with cold symptoms (sore throat and runny nose) and then within a day it has gone to my chest. I get very wheezy and produce a lot of mucus. *I often have to take oral steroids and antibiotics and use my inhalers more frequently. I have to stop playing sport and have time off school. It takes a little while before I can start playing sport again and get back to normal.*"

Polly aged 16

Directors

Simon Shaw

Non-executive Chairman

Simon Shaw joined Synairgen as executive Chairman on its inception in June 2003 and became non-executive Chairman in October of that year. He is Group Chief Financial Officer of Savills plc. He was Chief Financial Officer of Gyrus Group PLC from 2003 until its sale to Olympus Corporation in 2008, having previously been Chief Operating Officer of Profile Therapeutics plc between 1998 and 2003. Between 1991 and 1997 he was a corporate financier, latterly at Hambros Bank Limited. He is a chartered accountant.

Richard Marsden

Chief Executive Officer

Richard Marsden joined Synairgen in a consulting role as General Manager in November 2003, was appointed to the Board as Managing Director in June 2004 and appointed Chief Executive Officer in September 2009. Richard is a non-executive Director of Southampton Asset Management Limited. Between 1998 and 2003 he worked as Projects Manager and Cystic Fibrosis Business Development Manager at Profile Therapeutics plc, where he managed the Cystic Fibrosis business and played a major role in the development of its proprietary pharmaceutical unit, Profile Pharma Limited. Prior to this, he worked for Zimmer Limited, Genentech (UK) Limited and Roche Products Limited.

Dr Phillip Monk

Chief Scientific Officer

Phillip Monk joined Synairgen in October 2006 as Head of Bioscience Development and was appointed to the Board as Chief Scientific Officer in September 2009. Phillip was previously Director of the Respiratory and Inflammation Biology group at Cambridge Antibody Technology ('CAT') and led the scientific development of CAT-354, an anti-IL-13 antibody being developed for the treatment of severe asthma. Prior to joining CAT, he worked at Bayer AG within the respiratory disease therapeutic area, focusing on the development of novel therapies for asthma, COPD and cystic fibrosis.

John Ward

Finance Director

John Ward joined Synairgen in October 2004 as Finance Director. From December 1999 to July 2004 he was Chief Financial Officer and Company Secretary of Profile Therapeutics plc and was appointed to the Profile Therapeutics board in March 2003. From 1996 to 1999 he was Finance Director of Rapid Deployment Group Limited, the UK holding company for the healthcare operations of Ventiv Health, Inc. Prior to joining Rapid Deployment he was a Director of Corporate Finance at Price Waterhouse. He is a chartered accountant.

Iain Buchanan

Non-executive Director

Iain Buchanan was appointed as a non-executive Director in June 2010 and is currently Chief Executive Officer of NOXXON Pharma AG based in Berlin. Previously he was Chief Executive Officer of Novexel SA ('Novexel'), a specialty pharmaceutical company focused on novel anti-infectives, from its formation in 2004 until 2010, when it was sold to AstraZeneca. He has some 35 years' commercial experience in the pharmaceutical and biotech industries. He joined Novexel from Vertex Pharmaceuticals (Europe) Limited, where he was Managing Director. Prior to Vertex, Iain was the Regional Licensing Director of Cilag A.G. International, a division of Johnson & Johnson based in Switzerland, where he managed Cilag's international licensee business from 1987 to 1994.

Dr Bruce Campbell

Non-executive Director

Bruce Campbell joined Synairgen as a non-executive Director in April 2006. He has 40 years of drug development experience and has developed many drugs in a wide range of indications which are now on the market. He is currently a scientific advisor to IP Group plc and acts as a consultant to various companies including Proximagen Limited. Formerly he was Senior VP of International Development at Neurocrine Biosciences, Inc. ('Neurocrine'). Prior to joining Neurocrine he worked for 27 years at Servier (United Kingdom), latterly as Scientific Director. In addition, he has also been a Director and European Chairman of the Drug Information Association and a member of the European ICH Safety Working Party. He is a visiting Professor in Pharmacology at King's College, London.

Paul Clegg

Non-executive Director

Paul Clegg was appointed as a non-executive Director in September 2009. He is Chief Executive Officer of Accsys Technologies PLC, Chairman of Tricoya Technologies Ltd and a non-executive Director of Peel Hunt LLP. Paul was previously Managing Director and Chief Executive Officer of Cowen International Limited and Director of Cowen Asset Management Limited until June 2008. Paul has over twenty years' senior investment banking experience.

Prof. Stephen Holgate CBE

Non-executive Director

Stephen Holgate is a co-founder of Synairgen and was appointed a non-executive Director in June 2003. After qualifying in Medicine at Charing Cross Hospital Medical School, London he has pursued an academic career leading to his appointment in 1987 to his current position as Medical Research Council Clinical Professor of Immunopharmacology at the University of Southampton. His research interests have been largely focused on the cellular and molecular mechanisms of asthma that has involved use of both epidemiological and genetic approaches. He has published over 900 papers in peer-reviewed literature. He is currently Member of the newly formed Science Europe Medical Committee; Chairman of the European Respiratory Society Scientific Committee; Treasurer of the World Allergy Organisation; Chairman of Defra's Hazardous Substances Advisory Committee; Member of the Department of Health Committee on the Medical Effects of Air Pollution; and a scientific board member or advisor to eleven companies, including Amgen, Boehringer Ingelheim, Merck, and Novartis. In 2010, he was appointed by the Higher Education Funding Council for England to be the Chair of the Research Excellence Framework (REF) Main Panel A covering Medicine, Health and Life Sciences.

Synairgen's Founders and Scientific Advisors

Synairgen's Founders

Prof. Stephen Holgate CBE is MRC Clinical Professor of Immunopharmacology at the University of Southampton

Prof. Donna Davies is Professor of Respiratory Cell and Molecular Biology at the University of Southampton

Prof. Ratko Djukanovic is Professor of Medicine at the University of Southampton and Director of the Southampton NIHR Respiratory Biomedical Research Unit

Scientific Advisors

Prof. James Gern is Professor in the Department of Pediatrics at the University of Wisconsin and his research focusses on the role of viral infections in the initiation and disease activity of asthma

Prof. Sebastian Johnston is Professor of Respiratory Medicine & Allergy at the National Heart and Lung Institute, Imperial College, London

Prof. Wisia Wedziche is Professor of Respiratory Medicine at UCL Medical School and her work is centered on the causes and mechanisms of COPD exacerbations

Directors' Report

The Directors present their report and the audited financial statements for Synairgen plc (the 'Company') and its subsidiary (together the 'Group') for the year ended 31 December 2012.

Principal activities

Synairgen plc is the holding company for Synairgen Research Limited, a respiratory drug discovery and development company with a particular focus on viral defence.

Review of the business and future developments

A review of the business and anticipated future developments is included in the Chairman's and Chief Executive Officer's Report and the Financial Review set out on pages 3 to 8.

Research and development

During the year ended 31 December 2012, the Group has invested £1,508,000 (six months ended 31 December 2011: £1,815,000) in research and development activities and a review of this expenditure is included in the Financial Review.

Principal risks and uncertainties

The Board considers that the principal risks and uncertainties facing the Group may be summarised as follows:

- Reliance on the interferon beta programmes

All of the Group's resources are focused on the three interferon beta programmes. Whilst these are three separate indications (asthma, COPD and severe viral lung infections), there is a risk that failure in one indication may have a negative impact upon the others.

- Failure to generate innovative discoveries

There can be no guarantee that the Group will successfully develop new pharmaceutical products.

- Clinical development and regulatory risk

The development of pharmaceutical drugs requires the necessary safety and efficacy to be demonstrated in clinical programmes in order to meet the requirements of the appropriate regulatory bodies. There can be no guarantee that the necessary safety or efficacy will be demonstrated or that the clinical trials will not be delayed or extended. There can be no guarantee that any of the Group's therapies will be able to obtain or maintain the necessary regulatory approvals. The Group seeks to reduce this risk by closely monitoring the progress of recruitment on its clinical trials, drawing on the experience of its Founders, seeking advice from regulatory advisers, and holding consultations with the appropriate regulatory bodies.

- Intellectual property risk

The commercial success of the Group depends on its ability to obtain patent protection for its pharmaceutical discoveries in the US, Europe and other countries and to preserve the confidentiality of its know-how. There is no guarantee that patent applications will succeed or be broad enough to provide protection for the Group's intellectual property rights and exclude competitors with similar pharmaceutical products. The success of the Group is also dependent on non-infringement of patents, or other intellectual property rights, held by third parties. Competitors and third parties may hold intellectual property rights which the Group may not be able to license upon favourable terms, potentially inhibiting the Group's ability to develop and exploit its own business. Litigation may be necessary to protect the Group's intellectual property which may result in substantial costs.

The Group seeks to reduce this risk by seeking patent attorney advice that patent protection will be available prior to investing in a project, by seeking patent protection where appropriate and by minimising disclosure to third parties.

- Commercial risk

There can be no guarantee that the Group will succeed in securing and maintaining the necessary contractual relationships with licensing partners for its programmes under development. Even if the programmes are successfully out-licensed and pharmaceutical products are brought to market by a partner, there is no guarantee that such products will succeed in the marketplace.

The Group seeks to reduce this risk by structuring its development programmes to meet the needs and requirements of its potential partners and by engaging with partners who have the appropriate experience, resource and interest to bring such pharmaceutical products to the global marketplace.

- Competition risk

The Group's current and potential competitors include pharmaceutical and biotechnology companies and academic institutions, many of whom have significantly greater financial resources than the Group. There can be no assurance that competitors will not succeed in developing products that are more effective or economic than any developed by the Group, or which would render the Group's products non-competitive or obsolete.

- Funding risk

The Group continues to consume cash resources. Until the Group generates positive net cash inflows from successful out-licensing transactions and commercialisation of its products, it remains dependent upon securing additional funding through the injection of capital from share issues. The Group may not be able to generate positive net cash flows in the future or attract such additional funding required at all, or on suitable terms. In such circumstances, the Group's discovery and development programmes may be delayed or cancelled and the business operations curtailed.

The Group seeks to reduce this risk through tight financial control, prioritising programmes which will generate the best returns and keeping shareholders informed on progress.

- Dependence on Founders, senior management and key staff

The Founders and certain members of staff are highly skilled scientists and clinicians. The Group has deliberately pursued a lean headcount policy to conserve financial resources. Failure to continue to attract and retain such individuals could adversely affect operational results.

The Group seeks to reduce this risk by appropriate incentivisation of staff through participation in long term equity incentive schemes.

Key performance indicators ('KPIs')

The Board considers that the most important KPIs are non-financial and relate to the progress of the scientific programmes which are discussed in the Chairman's and Chief Executive Officer's Report.

The most important financial KPIs are the cash position and the operating loss of the Group. At 31 December 2012 cash and deposit balances amounted to £3.09 million and were above budgeted levels. The operating loss of £2.49 million was also favourable to the budgeted loss for the year.

Directors' Report (continued)

Results and dividends
The Group's loss after taxation for the year ended 31 December 2012 amounted to £2,250,000 (six months ended 31 December 2011: loss of £1,967,000). A Financial Review is set out on page 8. The Directors do not propose the payment of a dividend.

Financial instruments
The Group's use of financial instruments is discussed in the Financial Review on page 8 and in note 16 to the financial statements.

Substantial shareholdings
As at 12 February 2013, the Company had been advised of the following shareholders with interests of 3% or more in its ordinary share capital:

Name of shareholder	Number of ordinary shares	% of share capital
Lansdowne Partners Limited	15,023,111	20.0%
IP Group plc	8,135,921	10.8%
F&C Asset Management plc	6,480,512	8.6%
IP Venture Fund LP	5,564,020	7.4%
Mr MR Underwood	3,970,588	5.3%
Southampton Asset Management Limited	3,600,000	4.8%

Directors
The Directors of the Company during the year ended 31 December 2012 were:

Executive Directors:
Richard Marsden
Dr Phillip Monk
John Ward

Non-executive Directors:
Simon Shaw
Iain Buchanan
Dr Bruce Campbell
Paul Clegg
Prof. Stephen Holgate

Directors' interests in ordinary shares
The Directors, who held office at 31 December 2012, had the following interests in the ordinary shares of the Company:

	31 December 2012 Number of shares	1 January 2012 Number of shares
Richard Marsden	110,972	95,860
Dr Phillip Monk	28,592	18,518
John Ward	243,912	228,788
Simon Shaw (i)	1,408,879	1,368,580
Iain Buchanan	112,741	92,592
Dr Bruce Campbell	294,259	253,960
Paul Clegg (ii)	204,244	184,095
Prof. Stephen Holgate (iii)	858,360	852,316

(i) Simon Shaw's shareholding includes 40,299 shares held in his pension plan.
(ii) Paul Clegg's shareholding includes 200,299 shares held in his pension plan.
(iii) Prof. Stephen Holgate's shareholding includes 1,923 shares owned by his wife, Elizabeth Holgate.

Between 31 December 2012 and the date of this report there has been no change in the interests of Directors in shares or share options as disclosed in this report.

Directors' remuneration and share options
Details of Directors' remuneration and share options are given in the Directors' Remuneration Report on pages 20 to 22.

Directors' and officers' liability insurance
Qualifying indemnity insurance cover has been arranged in respect of the personal liabilities which may be incurred by Directors and officers of the Group during the course of their service with the Group. This insurance has been in place during the year and on the date of this report.

Payment of creditors
It is the policy of the Group and the Company that payments to suppliers are made in accordance with those terms and conditions agreed between the Group and its suppliers, provided that all trading terms and conditions have been complied with. At 31 December 2012 the Group had an average of 26 days' purchases outstanding in trade creditors (31 December 2011: 22 days' purchases).

Post balance sheet events
There are no events occurring post 31 December 2012 requiring disclosure.

Charitable and political donations
During the year ended 31 December 2012, the Group made no charitable donations (six months ended 31 December 2011: £nil) and no political donations (six months ended 31 December 2011: £nil).

Disabled employees
The Group gives every consideration to applications for employment from disabled persons where the requirements of the job may be adequately covered by a handicapped or disabled person. Should any employee become disabled, every practical effort is made to provide continued employment.

Auditors
All of the current Directors have taken all the steps that they ought to have taken to make themselves aware of any information needed by the Company's auditors for the purposes of their audit and to establish that the auditors are aware of that information. The Directors are not aware of any relevant audit information of which the auditors are unaware.

By order of the Board

John Ward
Company Secretary

12 February 2013

Corporate Governance

The Board is accountable to the Company's shareholders for good corporate governance and it is the objective of the Board to attain a high standard of corporate governance. As an AIM-quoted company, full compliance with The UK Corporate Governance Code (the 'Code') is not a formal obligation. The Company has not sought to comply with the full provisions of the Code, however it has sought to adopt the provisions that are appropriate to its size and organisation and establish frameworks for the achievement of this objective. This statement sets out the corporate governance procedures that are in place.

Board of Directors

On 31 December 2012 the Board of Directors (the 'Board') consisted of a non-executive Chairman (Simon Shaw), three executive Directors (Richard Marsden, Dr Phillip Monk and John Ward), and four non-executive Directors (Iain Buchanan, Dr Bruce Campbell, Paul Clegg and Prof. Stephen Holgate). Brief details about the Directors are given on pages 13 and 14. The responsibilities of the non-executive Chairman and the Chief Executive Officer are clearly divided. The non-executive Directors bring relevant experience from different backgrounds and receive a fixed fee for their services and reimbursement of reasonable expenses incurred in attending meetings.

The Board retains full and effective control of the Group. This includes responsibility for determining the Group's strategy and for approving budgets and business plans to fulfil this strategy. The full Board ordinarily meets bi-monthly. It also meets on any other occasions it considers necessary. During the year ended 31 December 2012, the Board met ten times, with each member attending as follows:

Director	Number of meetings held whilst a Board member	Number of meetings attended
Simon Shaw	10	10
Richard Marsden	10	10
Dr Phillip Monk	10	8
John Ward	10	10
Iain Buchanan	10	9
Dr Bruce Campbell	10	7
Paul Clegg	10	8
Prof. Stephen Holgate	10	3

It is the duty of the Chairman to ensure that all Directors are properly briefed on issues arising at Board meetings. Prior to each Board meeting, Directors are sent an agenda and Board papers for each agenda item to be discussed. Additional information is provided when requested by the Board or individual Directors.

The Company Secretary is responsible to the Board for ensuring that Board procedures are followed and that the applicable rules and regulations are complied with. All Directors have access to the advice and services of the Company Secretary, and independent professional advice, if required, at the Company's expense. Removal of the Company Secretary would be a matter for the Board.

As appropriate, the Board has delegated certain responsibilities to Board committees.

Audit Committee

The Audit Committee currently comprises Simon Shaw (Chairman) and Dr Bruce Campbell. Whilst it is not normal in larger companies for the chairman of the Company to chair the Audit Committee, the Company considers it appropriate for Simon Shaw to be Chairman as he is considered to have the most significant, recent and relevant financial experience of the non-executive Directors.

The committee has primary responsibility for ensuring that the financial performance of the Group is properly measured and reported on and it reviews the interim financial information and annual financial statements before they are submitted to the Board. The committee reviews accounting policies and material accounting judgements. The committee also reviews, and reports on, reports from the Group's auditors relating to the Group's accounting controls. It makes recommendations to the Board on the appointment of auditors and the audit fee. The committee monitors the scope, results and cost-effectiveness of the audit. It has unrestricted access to the Group's auditors. In certain circumstances it is permitted by the Board for the auditors to supply non-audit services (in the provision of tax advice, or on specific projects where they can add value). The committee has approved and monitored the application of this policy in order to safeguard auditor objectivity and independence. The overall fees paid to the auditors are not deemed to be of such significance to them as to impair their independence. The Group does not have an internal audit function, but the Board considers that this is appropriate, given the size of the Group. The committee keeps this matter under review annually. During the year ended 31 December 2012, the committee met four times and all meetings were attended by Simon Shaw and Dr Bruce Campbell.

Remuneration and Nomination Committee

The Remuneration and Nomination Committee currently comprises Paul Clegg (Chairman), Dr Bruce Campbell and Simon Shaw. The committee is responsible for making recommendations to the Board on remuneration policy for executive Directors and the terms of their service contracts, with the aim of ensuring that their remuneration, including any share options and other awards, is based on their own performance and that of the Group generally. The committee administers the Long-Term Incentive Plan, the staff share option scheme and the Qualifying Non-Employee Option Scheme and approves grants under all three schemes. It also advises on the remuneration policy for the Group's employees. The committee is responsible for all senior appointments that are made within the Group. During the year ended 31 December 2012, the committee met four times, with each member attending as follows:

Director	Number of meetings held whilst a Committee member	Number of meetings attended
Paul Clegg	4	4
Dr Bruce Campbell	4	3
Simon Shaw	4	4

Investor relations

The Directors seek to build a mutual understanding of objectives between the Company and its shareholders by meetings with major institutional investors and analysts after the Company's preliminary announcement of its year-end results and its interim results. The Company also maintains investor relations pages on its website (www.synairgen.com) to increase the amount of information available to investors. During the year, with the assistance of its retained financial public relations adviser (Newgate Threadneedle), the Directors have also had meetings with a number of private client stockbrokers around the UK to raise awareness of the Company.

There is an opportunity at the Annual General Meeting for individual shareholders to question the Chairman, the Chairmen of the Audit and Remuneration and Nomination committees, and the executive Directors. Notice of the meeting is sent to shareholders at least 21 clear days before the meeting. Shareholders are given the opportunity to vote on each separate issue. The Company counts all proxy votes and will indicate the level of proxies lodged on each resolution, after it has been dealt with by a show of hands. Details of the resolutions and explanations thereto are included with the notice.

Internal control

The Directors are responsible for establishing and maintaining the Group's system of internal control and reviewing its effectiveness. The system of internal control is designed to manage, rather than eliminate, the risk of failure to achieve business objectives and can only provide reasonable but not absolute assurance against material misstatement or loss.

The main features of the internal control system are as follows:

- a control environment exists through the close management of the business by the executive Directors. The Group has a defined organisational structure with delineated approval limits. Controls are implemented and monitored by personnel with the necessary qualifications and experience;
- a list of matters reserved for Board approval;
- monthly management reporting and analysis of variances;
- financial risks for each major transaction are identified and evaluated by the Board; and
- standard financial controls operate to ensure that the assets of the Group are safeguarded and that proper accounting records are maintained.

By order of the Board

John Ward
Company Secretary

12 February 2013

Directors' Remuneration Report

This report is non-mandatory for AIM-quoted companies and has been produced on a voluntary basis. It includes and complies with the disclosure obligations of the AIM Rules and with the principal disclosure requirements of Schedule 5 of the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008.

Remuneration Committee

The Company's remuneration policy is the responsibility of the Remuneration and Nomination Committee (the 'Committee'), which was established in October 2004. The terms of reference of the Committee are outlined in the Corporate Governance Statement on page 18. The members of the Committee are Paul Clegg (Chairman), Simon Shaw and Dr Bruce Campbell.

The Committee, which is required to meet at least twice a year, met four times during the year ended 31 December 2012. The Chief Executive Officer and certain executives may be invited to attend meetings of the Committee to assist it with its deliberations, but no executive is present when his or her own remuneration is discussed.

During the year, the Committee has been advised on Director remuneration by its retained independent remuneration adviser, FIT Remuneration Consultants LLP. No other advice has been provided to the Group by this firm during the year.

Remuneration policy

(i) Executive remuneration

The Committee has a duty to establish a remuneration policy which will enable it to attract and retain individuals of the highest calibre to run the Group. Its policy is to ensure that the executive remuneration packages of Executive Directors and the fee of the Chairman are appropriate given performance, scale of responsibility, experience, and consideration of the remuneration packages for similar executive positions in companies it considers are comparable. Packages are structured to motivate executives to achieve the highest level of performance in line with the best interests of shareholders. A significant element of the total remuneration package, in the form of bonus and LTIP awards, is performance driven.

Executive remuneration currently comprises a base salary, an annual performance-related bonus, a pension contribution to the executive Director's individual money purchase scheme (at 9% of base salary), family private health cover, permanent health and life assurance. Salaries and benefits are reviewed annually in July, taking into account Group and individual performance, external benchmark information and internal relativities, but it is the intention of the Company to align this with the financial year-end of the Company with effect from 1 January 2014. The Company operates a discretionary bonus scheme for executive Directors for delivery of exceptional performance against personal and corporate objectives, with the maximum bonus payable remaining at 200% of base salary. Bonuses payable to executive Directors in respect of the year ended 31 December 2012 were 34% of base salary, amounting to £44,000 for Richard Marsden, £33,000 for Dr Phillip Monk and £40,000 for John Ward. Pay rises awarded to executive Directors with effect from 1 July 2012 amounted to 3%, which was broadly consistent with the increase awarded to staff generally.

Executive Directors are also rewarded for improvements in the performance of the Group sustained over a period of years in the form of Long-Term Incentive Plan share awards granted on a discretionary basis by the Committee.

Directors' remuneration for the year ended 31 December 2012 is set out on page 22 of this document.

(ii) Chairman and non-executive Director remuneration

The Chairman, Mr Buchanan and Mr Clegg receive a fixed fee of £25,000 per annum. Dr Campbell and Professor Holgate receive a fixed fee of £15,000 per annum. The fixed fee covers preparation for and attendance at meetings of the full Board and committees thereof. A fee of £5,000 per annum is also paid for chairing each of the audit and remuneration committees. The Chairman and the executive Directors are responsible for setting the level of non-executive remuneration. These fees remain unchanged from 1 September 2009. The non-executive Directors are also reimbursed for all reasonable expenses incurred in attending meetings.

(iii) Equity-based incentive schemes

The Committee strongly believes that equity-based incentive schemes increase the focus of employees in improving Group performance, whilst at the same time providing a strong incentive for retaining and attracting individuals of a high calibre.

Long-Term Incentive Plan ('LTIP')

The Synairgen Long-Term Incentive Plan, comprising conditional (performance-related) share awards (technically structured as nominal cost options pursuant to which participants must pay 1p per share on the exercise of their awards), was introduced in 2005 as the primary long-term incentive vehicle for executive Directors. Senior executives and other employees may be granted an award which will normally vest if demanding performance conditions are achieved over a three-year period and if the grantee remains an employee of the Group.

Grants under the LTIP in any financial year are capped at a maximum of 100% of base salary. Historically, grants have been made in September following the publication of the final results for the year to June. The last grants were made in September 2011. Following, the change in year-end to 31 December, it was not considered appropriate to accelerate the date of grants so no grants were made during 2012. Instead, it is anticipated that grants will continue to be made following the publication of the final results in or around February each year with the next such grant following the results in February 2013. Executive Directors are expected to retain no fewer than 50% of shares acquired upon vesting of awards under the LTIP, net of taxes, until such time as, in combination with any other shares the executives may have acquired, they hold shares with a value equivalent to 100% of base salary.

All awards will lapse at the end of the applicable performance period to the extent that the applicable performance criteria conditions have not been satisfied with no opportunity for retesting. In the event of a good leaver event or a change of control of the Company, the LTIP awards may vest early, but only to the extent that, in the opinion of the Committee, the performance conditions have been satisfied at that time. The awards will generally also be subject to a time pro-rated reduction to reflect the reduced period of time between the grant of the awards and the time of vesting although this reduction may not be applied in certain cases.

Performance conditions for the 2009, 2010 and 2011 LTIP awards

The performance conditions for all three awards were the same. The awards are subject to two conditions. Firstly, awards will only vest to the extent that the percentage increase in the total shareholder return ('TSR', being the return earned by a shareholder over the performance period in terms of change in the share price and assuming re-investment of any dividends in more shares at the prevailing price on the relevant ex-dividend date) of the Company over the three year performance period is equal or greater than the percentage increase in the techMARK mediscience™ index over the same period as follows:

TSR growth over the performance period less percentage increase in the techMARK mediscience™ index over the same period	Vesting percentage of total number of shares subject to award
Less than 0%	0%
0%	25%
10%	50%
20%	100%
Performance between the steps	Pro-rata on a straight-line basis

Secondly, no award will vest unless the average annual growth in the TSR of the Company over the performance period is equal to or greater than RPI plus 2% or, for more than 75% of an award to vest, annual average TSR must exceed RPI by at least 5% rather than 2%.

Vesting of 2009 LTIP awards

In September 2012, the awards granted in 2009 vested in full. The TSR growth over the three year performance period amounted to 110% and the percentage increase in the techMARK mediscience™ index over the same period was 34%, resulting in an outperformance by 76%, thus meeting in full the first performance condition. Similarly, this significantly exceeded the RPI underpin.

Qualifying Non-Employee Option Scheme ('QNEOS')

On 12 June 2009 shareholders in General Meeting approved the adoption of the QNEOS. This plan is a discretionary share scheme which enables the Committee to grant market value share options to consultants and non-executive Directors who, in the opinion of the Committee, make, or, in the case of new appointments, will make, a significant contribution to the Group and where the Committee considers it to be in the interests of shareholders to make such grants.

During the year under review no options were granted under the QNEOS.

Vesting of 2009 QNEOS awards

In September and October 2012 the awards made in September and October 2009 vested in full. In September 2009, an award of options was made to a non-executive Director of the Company (Mr Clegg) which was subject to a performance condition whereby if TSR during the three year period exceeded 30% then the award would vest if full. The actual TSR achieved was 110% and therefore the award vested in full. In October 2009, an award of options was made to a consultant to the Company with non-market performance conditions. These conditions were achieved in full and therefore this award has also vested in full.

(iv) Service contracts and letters of appointment

The executive Directors have entered into service agreements which can be terminated on six months' notice by either party.

During the year, Richard Marsden continued to act as a non-executive Director of Southampton Asset Management Limited but did not receive any fees with regards to this appointment. None of the other executive Directors held non-executive directorships with other companies.

The Chairman and non-executive Directors have entered into letters of appointment for an initial fixed period of twelve months, which renew automatically for a further twelve month period on the anniversary of commencement. The appointment can be terminated on three months' notice by either party.

Directors' interests in share options

The interests of Directors in share options over ordinary shares during the year were as follows:

Synairgen Long-Term Incentive Plan

Date of grant	At 1 January and 31 December 2012	Exercise price	Earliest exercise date	Expiry date
Richard Marsden				
7 September 2009	605,000	1p	7 Sept 2012	6 Sept 2019
8 September 2010	498,969	1p	8 Sept 2013	7 Sept 2020
21 September 2011	538,063	1p	21 Sept 2014	20 Sept 2021
Dr Phillip Monk				
7 September 2009	414,625	1p	7 Sept 2012	6 Sept 2019
8 September 2010	371,134	1p	8 Sept 2013	7 Sept 2020
21 September 2011	400,212	1p	21 Sept 2014	20 Sept 2021
John Ward				
7 September 2009	550,000	1p	7 Sept 2012	6 Sept 2019
8 September 2010	453,608	1p	8 Sept 2013	7 Sept 2020
21 September 2011	489,148	1p	21 Sept 2014	20 Sept 2021

The options awarded in September 2010 and 2011 under the LTIP will only vest if the performance conditions outlined above are met. The exercise of the options awarded in September 2009 (which vested in 2012) is generally subject to the relevant option holder continuing to be an employee or Director of a company in the same Group as the Company at the relevant time.

Other options granted on or before the IPO or under the Synairgen plc Staff Option Scheme

Date of grant	At 1 January and 31 December 2012	Exercise price	Earliest exercise date	Expiry date
Richard Marsden				
11 October 2004	280,000	10p	11 Oct 2004	10 Oct 2014
11 October 2004	140,000	10p	30 June 2005	10 Oct 2014
26 October 2004	140,000	130p	30 June 2006	25 Oct 2014
26 October 2004	140,000	130p	30 June 2007	25 Oct 2014
Dr Phillip Monk				
2 October 2006	50,000	85.5p	2 Oct 2009	1 Oct 2016
John Ward				
26 October 2004	140,000	130p	30 June 2005	25 Oct 2014
26 October 2004	140,000	130p	30 June 2006	25 Oct 2014

The vesting and exercise of these other options is generally subject to the relevant option holder continuing to be an employee or Director of a company in the same Group as the Company at the relevant time. There are no further performance criteria.

Synairgen Qualifying Non-Employee Option Scheme

Date of grant	At 1 January and 31 December 2012	Exercise price	Earliest exercise date	Expiry date
Iain Buchanan				
28 June 2010	212,765	23.5p	28 Jun 2013	27 Jun 2020
Paul Clegg				
7 September 2009	250,000	20p	7 Sept 2012	6 Sept 2019

The options awarded in June 2010 will only vest to the extent that the percentage increase in the total shareholder return ('TSR') of the Company over the three year performance period is at least 5% pa (when 25% will vest) increasingly, on a straight-line basis, to 100% of vesting for 10% p.a. growth.

There were no other options granted to Directors or which were exercised or lapsed during the year.

The mid-market price of the Company's shares at 31 December 2012 was 45.5p. During the year then ended, the mid-market price ranged from 28.5p to 53.5p. On 12 February 2013 the closing price was 41.25p.

Audited information

The following section (Directors' remuneration) contains the disclosures required by Schedule 5 to the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008, forms part of the financial statements for the year ended 31 December 2012 and has been audited by the Company's auditor, BDO LLP.

Directors' remuneration

The aggregate remuneration received by Directors who served during the year ended 31 December 2012 and the six months ended 31 December 2011 was as follows:

		Year ended 31 December 2012						6 months ended 31 December 2011		
£'000	Note	Salary/fee	Benefits	Bonus	Total (excl. pension)	Pension	Total (incl. pension)	Total (excl. pension)	Pension	Total (incl. pension)
Executive Directors										
Richard Marsden	(i)	128	2	44	174	12	186	63	6	69
Dr Phillip Monk	(ii)	95	-	11	106	31	137	47	4	51
John Ward		117	2	40	159	11	170	58	5	63
Non-executive Directors										
Simon Shaw		30	-	-	30	-	30	15	-	15
Iain Buchanan		25	-	-	25	-	25	13	-	13
Dr Bruce Campbell	(iii)	15	-	-	15	-	15	8	-	8
Paul Clegg		30	-	-	30	-	30	15	-	15
Prof. Stephen Holgate	(iv)	15	-	-	15	-	15	8	-	8
Total		455	4	95	554	54	608	227	15	242

(i) Richard Marsden was the highest paid Director during the year ended 31 December 2012 and the six months ended 31 December 2011 and he did not exercise any share options during either period.

(ii) Dr Phillip Monk requested that £22,500 of his bonus entitlement for the year ended 31 December 2012 be paid in the form of an additional employer pension contribution.

(iii) £15,000 was paid to IP2IPO Limited for the services of Dr Bruce Campbell.

(iv) In addition to this fee for his services as a Director, Prof. Holgate received consultancy fees amounting to £11,000 (six months ended 31 December 2011: £5,000) as disclosed in note 19 to the financial statements.

(v) The total amount paid to third parties amounted to £15,000 (six months ended 31 December 2011: £8,000).

In addition to the amounts shown above, the share-based payment charge for the period was:

	Year ended 31 Dec 2012 £000	6 months ended 31 Dec 2011 £000
Richard Marsden	54	25
Dr Phillip Monk	40	18
John Ward	49	23
Iain Buchanan	4	2
Paul Clegg	2	2

Total share-based payment in respect of key management personnel amounted to £143,000 for the year ended 31 December 2012 (six months ended 31 December 2011: £66,000).

By order of the Board

Paul Clegg

Chairman of the Remuneration and Nomination Committee

12 February 2013

Statement of Directors' responsibilities in respect of the Annual Report and the Financial Statements

The Directors are responsible for preparing the annual report and the financial statements in accordance with applicable law and regulations.

Company law requires the Directors to prepare financial statements for each financial period. Under that law the Directors have elected to prepare the Group financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union and the Company financial statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards and applicable law). Under company law the Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and Company and of the profit or loss of the Group for that period. The Directors are also required to prepare financial statements in accordance with the rules of the London Stock Exchange for companies trading securities on the Alternative Investment Market.

In preparing these financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and accounting estimates that are reasonable and prudent;
- state whether they have been prepared in accordance with IFRSs as adopted by the European Union, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that the financial statements comply with the requirements of the Companies Act 2006. They are also responsible for safeguarding the assets of the Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Website publication

The Directors are responsible for ensuring the annual report and financial statements are made available on a website. Financial statements are published on the Group's website in accordance with AIM rules for companies and legislation in the United Kingdom governing the preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Group's website is the responsibility of the Directors. The Directors' responsibility also extends to the ongoing integrity of the financial statements contained therein.

Going concern

The Directors have prepared and reviewed financial forecasts. After due consideration of these forecasts and current cash resources, the Directors consider that the Company and the Group have adequate financial resources to continue in operational existence for the foreseeable future (being a period of at least twelve months from the date of this report), and for this reason the financial statements have been prepared on a going concern basis.

By order of the Board

John Ward
Company Secretary

12 February 2013

Independent Auditor's Report to the members of Synairgen plc

We have audited the financial statements of Synairgen plc for the year ended 31 December 2012 which comprise the Consolidated Statement of Comprehensive Income, the Consolidated Statement of Changes in Equity, the Consolidated Statement of Financial Position, the Consolidated Statement of Cash Flows, the Parent Company Balance Sheet and the related notes. The financial reporting framework that has been applied in the preparation of the group financial statements is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union. The financial reporting framework that has been applied in preparation of the parent company financial statements is applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Respective responsibilities of Directors and auditors

As explained more fully in the statement of Directors' responsibilities, the Directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's (APB's) Ethical Standards for Auditors.

Scope of the audit of the financial statements

A description of the scope of an audit of financial statements is provided on the APB's website at www.frc.org.uk/apb/scope/private.cfm.

Opinion on financial statements

In our opinion:

- the financial statements give a true and fair view of the state of the group's and the parent company's affairs as at 31 December 2012 and of the group's loss for the year then ended;
- the group financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union;
- the parent company's financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

Opinion on other matters prescribed by the Companies Act 2006

In our opinion the information given in the Directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Matters on which we are required to report by exception

We have nothing to report in respect of the following matters where the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the parent company, or returns adequate for our audit have not been received from branches not visited by us; or
- the parent company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Paul Anthony (senior statutory auditor)

For and on behalf of

BDO LLP, statutory auditor

Southampton
United Kingdom

12 February 2013

BDO LLP is a limited liability partnership registered in England and Wales (with registered number OC305127)

Consolidated Statement of Comprehensive Income

for the year ended 31 December 2012

	Notes	Year ended 31 December 2012 £000	6 months ended 31 December 2011 £000
Research and development expenditure		**(1,508)**	(1,815)
Other administrative expenses		**(982)**	(423)
Total administrative expenses		**(2,490)**	(2,238)
Loss from operations	4	**(2,490)**	(2,238)
Finance income	6	**27**	20
Loss before tax		**(2,463)**	(2,218)
Tax	7	**213**	251
Loss and total comprehensive income for the period attributable to equity holders of the parent		**(2,250)**	(1,967)
Loss per ordinary share			
Basic and diluted loss per share (pence)	8	**(3.12)p**	(2.83)p

Consolidated Statement of Changes in Equity

for the year ended 31 December 2012

	Notes	Share capital £000 18a	Share premium £000 18b	Merger reserve £000 18c	Retained deficit £000 18d	Total £000
At 1 July 2011		696	17,128	483	(13,313)	4,994
Recognition of share-based payments		-	-	-	96	96
Total comprehensive income for the period		-	-	-	(1,967)	(1,967)
At 31 December 2011		696	17,128	483	(15,184)	3,123
Issuance of ordinary shares		56	2,445	-	-	2,501
Transaction costs in respect of share issues		-	(151)	-	-	(151)
Recognition of share-based payments		-	-	-	193	193
Total comprehensive income for the year		-	-	-	(2,250)	(2,250)
At 31 December 2012		**752**	**19,422**	**483**	**(17,241)**	**3,416**

Consolidated Statement of Financial Position

as at 31 December 2012

	Notes	31 December 2012 £000	31 December 2011 £000
Assets			
Non-current assets			
Intangible assets	9	**332**	239
Property, plant and equipment	10	**27**	48
		359	287
Current assets			
Inventories	11	**72**	85
Current tax receivable		**210**	250
Trade and other receivables	12	**79**	113
Other financial assets – bank deposits	13	**1,431**	2,455
Cash and cash equivalents	14	**1,656**	896
		3,448	3,799
Total assets		**3,807**	4,086
Liabilities			
Current liabilities			
Trade and other payables	15	**(391)**	(963)
Total liabilities		**(391)**	(963)
Total net assets		**3,416**	3,123
Equity			
Capital and reserves attributable to equity holders of the parent			
Share capital	17	**752**	696
Share premium	17	**19,422**	17,128
Merger reserve		**483**	483
Retained deficit		**(17,241)**	(15,184)
Total equity		**3,416**	3,123

The financial statements on pages 25 to 38 were approved and authorised for issue by the Board of Directors on 12 February 2013 and signed on its behalf by:

Richard Marsden
Chief Executive Officer

John Ward
Finance Director

Consolidated Statement of Cash Flows

for the year ended 31 December 2012

	Year ended 31 December 2012 £000	6 months ended 31 December 2011 £000
Cash flows from operating activities		
Loss before tax	**(2,463)**	(2,218)
Adjustments for:		
Finance income	**(27)**	(20)
Depreciation	**30**	15
Amortisation	**46**	17
Loss on derecognised intangible asset	**5**	-
Share-based payment charge	**193**	96
Cash flows from operations before changes in working capital	**(2,216)**	(2,110)
Decrease in inventories	**13**	131
Decrease in trade and other receivables	**30**	4
(Decrease)/Increase in trade and other payables	**(572)**	41
Cash used in operations	**(2,745)**	(1,934)
Tax credit received	**254**	396
Net cash used in operating activities	**(2,491)**	(1,538)
Cash flows from investing activities		
Interest received	**30**	15
Purchase of property, plant and equipment	**(9)**	(3)
Purchase of intangible assets	**(144)**	(16)
Decrease in other financial assets	**1,024**	946
Net cash generated from investing activities	**901**	942
Cash flows from financing activities		
Proceeds from issuance of ordinary shares	**2,501**	-
Transaction costs in respect of share issues	**(151)**	-
Net cash generated from financing activities	**2,350**	-
Increase/(Decrease) in cash and cash equivalents	**760**	(596)
Cash and cash equivalents at beginning of the period	**896**	1,492
Cash and cash equivalents at end of the period	**1,656**	896

Notes to the Consolidated Financial Statements

for the year ended 31 December 2012

1. Accounting policies

Basis of preparation

The Group financial statements have been prepared in accordance with International Financial Reporting Standards as adopted by the European Union (Adopted IFRSs) and with those parts of the Companies Act 2006 applicable to companies preparing their financial statements under IFRSs.

The following new standards, amendments to standards and interpretations that have been issued by the International Accounting Standards Board and the International Financial Reporting Interpretations Committee are to be applied to financial statements with periods commencing on or after the following dates:

International Accounting and Financial Reporting Standards (IAS/IFRS)		Effective date
IAS 1	Presentation of Items of Other Comprehensive Income (Amendment)	1 July 2012
IAS 19	Employee Benefits	1 January 2013
IAS 27	Separate Financial Statements	1 January 2013
IAS 28	Investments in Associates and Joint Ventures (Amendment)	1 January 2013
	Annual Improvements to IFRSs (2009-2011 Cycle)	1 January 2013
IFRS 10	Consolidated Financial Statements	1 January 2013
IFRS 11	Joint Arrangements	1 January 2013
IFRS 12	Disclosure of Interests in Other Entities	1 January 2013
IFRS 13	Fair Value Measurement	1 January 2013
IFRS 9*	Financial Instruments	1 January 2015

* Not endorsed by the European Union as at the date of approval of these financial statements.

The Directors anticipate that the adoption of these standards and interpretations in future periods will have no material impact on the financial statements of the Group.

The Group financial statements are presented in Sterling.

Basis of consolidation

The consolidated financial statements incorporate the financial statements of the Company and entities controlled by the Company made up to the reporting date. Control is achieved where the Company has the power to govern the financial and operating policies of an investee entity so as to obtain benefits from its activities. All intra-group transactions, balances, income and expenses are eliminated on consolidation. Business combinations that took place prior to 1 July 2006, the date of transition to IFRS, have not been restated as permitted by IFRS 1 "First-time Adoption of International Financial Reporting". The consolidated financial statements have been prepared using the merger method of accounting.

Change of Accounting Reference Date in prior accounting period

During the prior accounting period the Group brought forward its financial year-end from 30 June to 31 December for administrative reasons to expedite the production of its annual report and accounts. As a result these financial statements cover the year ended 31 December 2012 with comparative financial information being given for the six months ended 31 December 2011, and therefore the amounts presented in the financial statements are not entirely comparable.

Research and development

All ongoing research expenditure is currently expensed in the period in which it is incurred. Due to the regulatory and other uncertainties inherent in the development of the Group's products, the criteria for development costs to be recognised as an asset, as set out in IAS 38 "Intangible Assets", are not met until a product has been submitted for regulatory approval and it is probable that future economic benefit will flow to the Group. The Group currently has no such qualifying expenditure.

1. Accounting policies (continued)

Employee benefits
All employee benefit costs, notably salaries, holiday pay, bonuses and contributions to Group stakeholder or personal defined contribution pension schemes are charged to the consolidated statement of comprehensive income on an accruals basis.

Share-based payments
Option awards and awards made under the Group's Long-Term Incentive Plan ('LTIP') granted after 7 November 2002 which had not vested by 1 July 2006 are fair valued and charged to the consolidated statement of comprehensive income over the period from grant to vesting. The Group has fair-valued option and LTIP awards using appropriate share valuation models. Options granted to non-employees are measured at the fair value of the goods or services received, except where the fair value cannot be estimated reliably, in which case they are measured at the fair value of the equity instrument granted. At each reporting date, the Group revises its estimate of the number of options that are expected to become exercisable. The credit for any charge is taken to equity.

Intangible assets
Intangible assets are stated at cost less any accumulated amortisation and any accumulated impairment losses. Patent and licence costs are amortised over ten years on a straight-line basis and the amortisation cost is charged to research and development expenditure in the consolidated statement of comprehensive income.

Property, plant and equipment
Property, plant and equipment are stated at cost less any accumulated depreciation and any accumulated impairment losses. Depreciation is provided on a straight-line basis at rates calculated to write off the cost of property, plant and equipment, less their estimated residual value over their expected useful lives, which are as follows:

Computer equipment:	3 years
Laboratory and clinical equipment:	5 years

The carrying values of property, plant and equipment are reviewed for impairment if events or changes in circumstances indicate that the carrying value may not be recoverable.

Inventories
Inventories are stated at the lower of cost and net realisable value.

Financial instruments
Financial assets and financial liabilities are recognised on the Group's consolidated statement of financial position when the Group becomes a party to the contractual provisions of the instrument.

Financial assets
The Group classifies its financial assets as loans and receivables. These assets are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They are initially recognised at fair value plus transaction costs that are directly attributable to their acquisition or issue, and are subsequently carried at amortised cost using the effective interest rate method, less provision for impairment. Impairment provisions are recognised when there is objective evidence (such as significant financial difficulties on the part of the counterparty or default or significant delay in payment) that the Group will be unable to collect all of the amounts due under the terms receivable; the amount of such a provision being the difference between the net carrying amount and the present value of the future expected cash flows associated with the impaired receivable.

The Group's loans and receivables comprise trade and other receivables, other financial assets and cash and cash equivalents in the consolidated statement of financial position. Other financial assets comprise short-term deposits not meeting the IAS 7 definition of a cash equivalent. Cash and cash equivalents includes cash in hand, deposits held at call with banks and other short-term bank deposits with a maturity period of three months or less from the date of initial deposit.

Financial liabilities
The Group classifies its financial liabilities as financial liabilities held at amortised cost. Trade payables are initially recognised at fair value and subsequently carried at amortised cost using the effective interest rate method.

Leased assets
Where substantially all of the risks and rewards incidental to ownership are not transferred to the Group (an 'operating lease'), the total rentals payable under the lease are charged to the consolidated statement of comprehensive income on a straight-line basis over the lease term.

1. Accounting policies (continued)

Taxation

Income tax is recognised or provided at amounts expected to be recovered or to be paid using the tax rates and tax laws that have been enacted or substantively enacted at the reporting date. Research and development tax credits are included as an income tax credit under current assets.

Deferred tax balances are recognised in respect of all temporary differences that have originated but not reversed by the reporting date except for differences arising on:

- investments in subsidiaries where the Group is able to control the timing of the reversal of the difference and it is probable that the difference could not reverse in the foreseeable future; and
- the initial recognition of an asset or liability in a transaction which is not a business combination and at the time of the transaction affects neither accounting or taxable profit.

The amount of the asset or liability is determined using tax rates that have been enacted or substantively enacted by the reporting date and are expected to apply when the deferred tax liabilities/(assets) are settled/(recovered).

Recognition of deferred tax assets is restricted to those instances where it is probable that a taxable profit will be available against which the temporary difference can be utilised. Deferred tax balances are not discounted.

Foreign currencies

Transactions entered into by Group entities in a currency other than the currency of the primary economic environment in which they operate (their "functional currency") are recorded at the rates ruling when the transactions occur. Foreign currency monetary assets and liabilities are translated at the rates ruling at the reporting date. Exchange differences arising on the retranslation of unsettled monetary assets and liabilities are recognised immediately in the consolidated statement of comprehensive income.

The functional currency of all entities in the Group is Sterling.

2. Critical accounting estimates and judgements

Critical accounting estimates, assumptions and judgements are continually evaluated by management based on available information and experience. As the use of estimates is inherent in financial reporting, actual results could differ from these estimates.

Inventory

The Group's raw material inventory shown in note 11 comprises the Group's biobank of human tissue, which is valued net of a provision for items which management consider will be excess to the Group's future research and development requirements. Inventories have been written down by £9,000 during the year.

Share-based payment

The critical accounting estimates, assumptions and judgements underpinning the valuation of the option and LTIP awards are disclosed in note 17.

3. Segmental analysis

The Group operates in one area of activity, namely drug discovery and development. All assets of the Group are located within the United Kingdom and all losses were generated in that territory.

4. Loss from operations

The loss from operations has been arrived at after charging:

	Year ended 31 Dec 2012 £000	6 months ended 31 Dec 2011 £000
Depreciation of property, plant and equipment	**30**	15
Amortisation of intangible assets	**46**	17
Loss on derecognised intangible asset	**5**	-
Research and development expenditure	**1,508**	1,815
Operating lease rentals payable		
Land and buildings	**79**	39
Other operating lease rentals	**93**	47

The fees of the Group's auditor, BDO LLP, for services provided are analysed below:

	Year ended 31 Dec 2012 £000	6 months ended 31 Dec 2011 £000
Fees payable to the Company's auditor for the audit of the Company's financial statements	**10**	10
Fees payable to the Company's auditor for other services:		
The audit of the Company's subsidiary, pursuant to legislation	**10**	10
Audit-related assurance services	**5**	-
Tax compliance services	**5**	5
Tax advisory services	**3**	2
Total fees	**33**	27

5. Employee benefit expense

The average monthly number of employees (including executive Directors) was:

	Year ended 31 Dec 2012	6 months ended 31 Dec 2011
Research	**15**	24
Administration	**3**	3
	18	27

Their aggregate remuneration comprised:

	Year ended 31 Dec 2012 £000	6 months ended 31 Dec 2011 £000
Wages and salaries	**874**	493
Social security costs	**104**	58
Pension costs – defined contribution plans	**72**	29
Total cash-settled remuneration	**1,050**	580
Accrued holiday pay	**(2)**	(20)
Share-based payment	**182**	90
Total remuneration	**1,230**	650

For the purpose of presentation in the Consolidated Statement of Comprehensive Income, remuneration costs of £705,000 (six months ended 31 December 2011: £453,000) are included in research and development expenditure and £525,000 (six months ended 31 December 2011: £197,000) are included in other administrative expenses.

5. Employee benefit expense (continued)

Key management compensation

The Directors represent the key management personnel and details of their remuneration are given in the Directors' Remuneration Report.

In respect of Directors' remuneration, the disclosures required by Schedule 5 to the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 are included in the detailed disclosures in the audited section of the Remuneration Report on page 22, which are ascribed as forming part of these financial statements.

6. Finance income

For the year ended 31 December 2012 and the six months ended 31 December 2011, Finance income represents bank interest receivable.

7. Taxation

Current tax

	Year ended 31 Dec 2012 £000	6 months ended 31 Dec 2011 £000
UK corporation tax credit on loss for the period	**(210)**	(250)
Adjustment in respect of prior periods	**(3)**	(1)
Total income tax credit	**(213)**	(251)

The tax assessed on the loss on ordinary activities for the period is different to the standard rate of corporation tax in the UK of 24.5% (six months ended 31 December 2011: 26%). The differences are reconciled below:

	Year ended 31 Dec 2012 £000	6 months ended 31 Dec 2011 £000
Loss on ordinary activities before tax	**(2,463)**	(2,218)
Loss on ordinary activities before tax multiplied by the standard rate of corporation tax in the UK	**(603)**	(577)
Effects of:		
Expenses not deductible for tax purposes	**48**	25
Enhanced research & development relief	**(231)**	(321)
Variable rates on tax losses surrendered for research & development tax credit	**238**	270
Movement in unrecognised losses and temporary differences	**338**	353
Overprovision in respect of previous periods	**(3)**	(1)
Total tax credit for the current period	**(213)**	(251)

Deferred taxation

Changes in tax rates and factors affecting the future tax charge

Finance Act 2012 includes provision for the main rate of corporation tax to reduce from 26% to 24% on 1 April 2012, and to 23% on 1 April 2013. It has also been announced that there will be a further 1% reduction to bring the main rate to 22% from 1 April 2014. This will reduce the Company's future tax charge accordingly. The rate of 24% was substantially enacted on the 26 March 2012 and the rate of 23% was substantially enacted on 6 July 2012. Accordingly, deferred tax balances have been recognised at 23%, the rate of corporation tax enacted in Finance Act 2012 to apply from 1 April 2013.

Recognised deferred taxation	Year ended 31 Dec 2012 £000	6 months ended 31 Dec 2011 £000
Accelerated capital allowances	**4**	9
Other temporary differences	**(4)**	(6)
Losses	**-**	(3)
Charge for the period	**-**	-

7. Taxation (continued)

Unrecognised deferred taxation

At 31 December 2012 the Group has trading losses carried forward which are available for offset against future profits of the Group amounting to £9,624,000 (31 December 2011: £8,424,000) and non-trading losses of £861,000 (31 December 2011: £635,000). At 31 December 2012 the Group has an unrecognised deferred tax asset in respect of these losses of £2,412,000 (31 December 2011: £2,265,000). The full utilisation of these losses in the foreseeable future is uncertain and no deferred tax asset has therefore been recognised.

The movement on the unrecognised deferred tax asset comprises the following:

	Year ended 31 Dec 2012 £000	6 months ended 31 Dec 2011 £000
Unrecognised deferred tax asset at the start of the period	**(2,265)**	(1,990)
Effect of tax rate change	**181**	90
Movement in period	**(328)**	(365)
Unrecognised deferred tax asset at the period-end	**(2,412)**	(2,265)

8. Loss per ordinary share

	Year ended 31 Dec 2012	6 months ended 31 Dec 2011
Loss attributable to equity holders of the Company (£000)	**(2,250)**	(1,967)
Weighted average number of ordinary shares in issue	**72,036,917**	69,560,064

The loss attributable to ordinary shareholders and weighted average number of ordinary shares for the purpose of calculating the diluted earnings per ordinary share are identical to those used for basic earnings per share. This is because the exercise of share options would have the effect of reducing the loss per ordinary share and is therefore not dilutive under the terms of IAS 33. At 31 December 2012, there were 7,511,635 options outstanding (31 December 2011: 7,911,787 options outstanding) as detailed in note 17.

9. Intangible assets

	Patent and licence costs £000
Cost	
At 1 July 2011	329
Additions	16
At 31 December 2011	345
Additions	144
Derecognised assets	(5)
At 31 December 2012	**484**
Amortisation	
At 1 July 2011	89
Charge for the period	17
At 31 December 2011	106
Derecognised assets	-
Charge for the year	46
At 31 December 2012	**152**
Net book amount	
At 31 December 2012	**332**
At 31 December 2011	239
At 1 July 2011	240

At 31 December 2012 £332,000 (31 December 2011: £229,000) of the net book amount relates to interferon beta and lambda patent and licence costs, which has a remaining average amortisation period of 7 years (31 December 2011: 7 years).

10. Property, plant and equipment

	Computer equipment £000	Laboratory and clinical equipment £000	Total £000
Cost			
At 1 July 2011	81	172	253
Additions	2	1	3
At 31 December 2011	83	173	256
Additions	9	-	9
Derecognised assets	(50)	(41)	(91)
At 31 December 2012	**42**	**132**	**174**
Depreciation			
At 1 July 2011	71	122	193
Charge for the period	3	12	15
At 31 December 2011	74	134	208
Derecognised assets	(50)	(41)	(91)
Charge for the year	6	24	30
At 31 December 2012	**30**	**117**	**147**
Net book value			
At 31 December 2012	**12**	**15**	**27**
At 31 December 2011	9	39	48
At 1 July 2011	10	50	60

At 31 December 2012 the Group had no capital commitments (31 December 2011: nil).

11. Inventories

	31 Dec 2012 £000	31 Dec 2011 £000
Raw materials	**72**	85

Raw materials comprises the Group's biobank.

12. Trade and other receivables

	31 Dec 2012 £000	31 Dec 2011 £000
Amounts receivable within one year:		
Other tax and social security	**22**	42
Prepayments and accrued income	**57**	71
	79	113

13. Other financial assets – bank deposits

	31 Dec 2012 £000	31 Dec 2011 £000
Amounts receivable within one year:		
Sterling fixed rate deposits of greater than three months' maturity at inception	**1,431**	2,455

14. Cash and cash equivalents

	31 Dec 2012 £000	31 Dec 2011 £000
Cash available on demand	**1,656**	746
Sterling fixed rate deposits of up to three months' maturity at inception	**-**	150
	1,656	896

15. Trade and other payables

	31 Dec 2012 £000	31 Dec 2011 £000
Trade payables	**97**	199
Social security and other taxes	**30**	35
Accrued expenses	**264**	729
	391	963

16. Financial instruments

An explanation of the Group's objectives, policies and strategies for financial instruments and analysis of the capital structure and capital funding of the Group can be found on page 8 in the Financial Review.

	Notes	31 Dec 2012 Book value £000	31 Dec 2012 Fair value £000	31 Dec 2011 Book value £000	31 Dec 2011 Fair value £000
Financial assets					
Loans and receivables					
Trade and other receivables	(i)	**29**	**29**	51	51
Other financial assets (less than one year)		**1,431**	**1,431**	2,455	2,455
Cash and cash equivalents (less than one year)		**1,656**	**1,656**	896	896
Total		**3,116**	**3,116**	3,402	3,402
Financial liabilities					
Other financial liabilities					
Trade and other payables (less than one year)	(ii)	**361**	**361**	928	928

(i) Trade and other receivables shown above excludes prepayments, which are not a contractual obligation to receive cash, amounting to £50,000 (31 December 2011: £62,000).

(ii) Trade and other payables shown above excludes amounts due in respect of social security and other taxes, which are not a contractual obligation to pay cash, amounting to £30,000 (31 December 2011: £35,000).

16. Financial instruments (continued)

The objective of holding financial instruments is to have access to finance for the Group's operations and to manage related risks. The main risks arising from holding these instruments are interest rate risk, liquidity risk, and credit risk.

Interest rate risk

Interest rate risk profile of financial assets, excluding short-term debtors:

	31 Dec 2012 Floating rate financial assets £000	31 Dec 2011 Floating rate financial assets £000
Australian Dollar	**-**	66
Euro	**83**	-
Sterling	**3,004**	3,285
Total	**3,087**	3,351

Floating-rate financial assets comprise cash on deposit and cash at bank. There is no difference between the carrying amount and the fair value of the financial assets.

Short-term deposits are placed with banks for periods of up to twelve months and are categorised as floating-rate financial assets. Contracts in place at 31 December 2012 had a weighted average period to maturity of 48 days and a weighted average annualised rate of interest of 1.09% (31 December 2011: 83 days, 1.31%).

Sensitivity analysis

It is estimated that a decrease of half of one percentage point in interest rates would have increased the Group's loss before taxation by approximately £16,000 (six months ended 31 December 2011: £11,000).

Liquidity risk

The Group's policy is to maintain adequate cash resources to meet liabilities as they fall due. All Group payable balances as at 31 December 2012 and 31 December 2011 fall due for payment within one year. Cash balances are placed on deposit for varying periods with reputable banking institutions to ensure there is limited risk of capital loss. The Group does not maintain an overdraft facility.

Credit risk

The Group's credit risk is attributable to its banking deposits. The Group places its deposits with reputable financial institutions to minimise credit risk.

17. Share capital and premium

	Note	Number of shares	Ordinary shares of 1p each £000	Share premium £000	Total £000
At 1 July 2011 and 31 December 2011		69,560,064	696	17,128	17,824
Issuance of ordinary shares	(i) (ii)	5,624,272	56	2,445	2,501
Costs of issuance of shares		-	-	(151)	(151)
At 31 December 2012		**75,184,336**	**752**	**19,422**	**20,174**

(i) 5,555,556 ordinary shares of 1p were issued on 23 July 2012 at a premium of 44p per share to finance the Company's ongoing interferon beta programme and to provide working capital for the Company. Funds raised net of expenses amounted to £2,349,000.

(ii) 68,716 ordinary shares of 1p were issued on 28 September 2012 at par following the exercise of share options under the Company's Long Term Incentive Plan (LTIP).

The total authorised number of ordinary shares is 125 million shares (31 December 2011: 125 million shares) with a par value of 1p per share (31 December 2011: 1p per share). All issued shares are fully paid.

17. Share capital and premium (continued)

Options

At 31 December 2012 there were options outstanding over 7,511,635 un-issued ordinary shares, equivalent to 10.0% of the issued share capital, as follows:

Date of grant	Number of shares	Exercise price	Earliest exercise date	Latest exercise date
Approved EMI scheme				
26 October 2004	64,515	130p	30 June 2005	25 October 2014
26 October 2004	64,515	130p	30 June 2006	25 October 2014
26 October 2004	42,000	130p	26 October 2007	25 October 2014
12 May 2005	14,000	136.5p	12 May 2008	11 May 2015
2 October 2006	119,159	85.5p	2 October 2009	1 October 2016
29 October 2007	29,848	61.5p	29 October 2010	28 October 2017
Unapproved schemes				
11 October 2004	280,000	10p	11 October 2004	10 October 2014
11 October 2004	140,000	10p	30 June 2005	10 October 2014
26 October 2004	75,485	130p	30 June 2005	25 October 2014
26 October 2004	215,485	130p	30 June 2006	25 October 2014
26 October 2004	140,000	130p	30 June 2007	25 October 2014
7 September 2009 (LTIP)	1,855,431	1p	7 September 2012	6 September 2019
7 September 2009 (QNEOS)	250,000	20p	7 September 2012	6 September 2019
16 October 2009 (QNEOS)	250,000	20p	16 October 2012	15 October 2019
28 June 2010 (QNEOS)	212,765	23.5p	28 June 2013	27 June 2020
8 September 2010 (LTIP)	1,815,250	1p	8 September 2013	7 September 2020
21 September 2011 (LTIP)	1,943,182	1p	21 September 2014	20 September 2021
	7,511,635			

The Group has no legal or constructive obligation to repurchase or settle the options in cash. The movement in the number of share options is set out below:

	Year ended 31 Dec 2012		6 months ended 31 Dec 2011	
	Number	Weighted average exercise price	Number	Weighted average exercise price
Outstanding at start of period	**7,911,787**	**15.2p**	6,283,487	18.9p
Granted during the period	**-**		2,126,469	1.0p
Exercised during the period	**(68,716)**	**1.0p**	-	
Lapsed during the period	**(331,436)**	**9.6p**	(498,169)	1.0p
Number of outstanding options at period-end	**7,511,635**	**15.6p**	7,911,787	15.2p

At 31 December 2012, 3,540,438 share options were capable of being exercised (31 December 2011: 1,214,576) and had an average exercise price of 30.6p (31 December 2011: 81.7p). The options outstanding at 31 December 2012 had a weighted average remaining contractual life of 6.7 years (31 December 2011: 7.8 years).

17. Share capital and premium (continued)

The Group uses a number of share-based incentive schemes as detailed above. The fair value per award granted and the assumptions used in the calculations for the 6,671,635 options which had not vested at 30 June 2006 (being the date after which IFRS 2 has been applied) are as follows:

Date of grant	Type of award	Number of shares	Exercise price (p)	Share price at date of grant (p)	Fair value per option (p)	Award life (years)	Risk free rate	Expected volatility rate	Performance conditions
26 Oct 2004	Unapproved	140,000	130p	155p	57.7p	5	4.59%	20%	None
26 Oct 2004	EMI	42,000	130p	155p	57.7p	5	4.59%	20%	None
12 May 2005	EMI	14,000	136.5p	135.5p	36.9p	5	4.35%	20%	None
2 Oct 2006	EMI	119,159	85.5p	85.5p	24.4p	5	4.75%	20%	None
29 Oct 2007	EMI	29,848	61.5p	61.5p	17.8p	5	4.95%	20%	None
7 Sept 2009	LTIP	1,855,431	1p	18.5p	7.1p	3	2.09%	30%	Market
7 Sept 2009	QNEOS	250,000	20p	18.5p	4.0p	5	2.67%	30%	Market
16 Oct 2009	QNEOS	250,000	20p	20p	6.3p	5	2.65%	30%	Non-market
28 Jun 2010	QNEOS	212,765	23.5p	23.5p	5.6p	5	2.09%	30%	Market
8 Sept 2010	LTIP	1,815,250	1p	24.25p	12.1p	3	0.92%	40%	Market
21 Sept 2011	LTIP	1,943,182	1p	22.5p	13.4p	3	0.79%	56%	Market
		6,671,635							

In accordance with IFRS 2, the Company has applied IFRS 2 to all share-based payments granted after 7 November 2002 which had not vested by 1 July 2006. The following comments apply to those options which have been fair valued in accordance with IFRS 2.

(i) Stochastic valuation methodology was used for the LTIP awards and the QNEOS awards with market performance conditions and Black-Scholes methodology for the other awards.

(ii) Expected dividend yield is nil, consistent with the Directors' view that the Group's model is to generate value through capital growth rather than payment of dividends.

(iii) The risk free rate is equal to the prevailing UK Gilts rate at grant date that most closely matches the expected term of the grant.

(iv) The fair value charge is spread evenly over the expected vesting period.

(v) The charge for the year ended 31 December 2012 for share-based payment amounted to £193,000 (six months ended 31 December 2011: £96,000).

18. Capital and reserves

18a Share capital

Share capital represents the nominal value of shares issued.

18b Share premium

Share premium represents amounts subscribed for share capital in excess of nominal value less the related costs of share issues.

18c Merger reserve

The merger reserve represents the reserve arising on the acquisition of Synairgen Research Limited on 11 October 2004 via a share for share exchange accounted for as a Group reconstruction using merger accounting under UK GAAP.

18d Retained deficit

The retained deficit represents cumulative net gains and losses recognised in the consolidated statement of comprehensive income, adjusted for cumulative recognised share-based payments.

19. Related party transactions and balances

During the year ended 31 December 2012, the Group incurred consultancy fees with Prof. Stephen Holgate, a Director of the Company, amounting to £11,000 (six months ended 31 December 2011: £5,000) in addition to his Director's remuneration disclosed on page 22. At the reporting date, the amount unpaid in respect of these charges was £11,000 (31 December 2011: £1,000).

During the year ended 31 December 2012, the Group incurred consultancy fees with Ms Emma Toman, partner of Richard Marsden, a Director of the Company, amounting to £1,000 in connection with risk assessments (six months ended 31 December 2011: £nil). At the reporting date, there was no amount unpaid in respect of these charges (31 December 2011: £nil).

Details of key management personnel and their compensation are given in note 5 and on page 22 of the Directors' Remuneration Report.

Parent Company Balance Sheet

as at 31 December 2012

Company number: 5233429

	Notes	31 December 2012 £000	31 December 2011 £000
Fixed assets			
Investments	5	**17,761**	15,405
Current assets			
Debtors	6	**9**	20
Investments: short-term deposits		**1,431**	2,455
Cash at bank and in hand		**1,632**	647
		3,072	3,122
Creditors: amounts falling due within one year	7	**(36)**	(48)
Net current assets		**3,036**	3,074
Total assets less current liabilities		**20,797**	18,479
Capital and reserves			
Called up share capital	8	**752**	696
Share premium account	8	**19,422**	17,128
Profit and loss account	9	**623**	655
Shareholders' funds	9	**20,797**	18,479

The financial statements on pages 39 to 42 were approved and authorised for issue by the Board of Directors on 12 February 2013 and signed on its behalf by:

Richard Marsden
Chief Executive Officer

John Ward
Finance Director

Notes to the Parent Company Financial Statements

for the year ended 31 December 2012

1. Basis of preparation

Synairgen plc's Parent Company balance sheet has been prepared under the historical cost convention and in accordance with UK Generally Accepted Accounting Practice ('UK GAAP').

As permitted by FRS 1 "Cash Flow Statements", no cash flow statement for the Company has been included on the grounds that the Group includes the Company in its own published consolidated financial statements. The Company has taken advantage of the exemption in FRS 8 "Related Party Disclosures" not to disclose related party transactions with wholly-owned subsidiaries.

2. Accounting policies

The following accounting policies have been applied consistently in dealing with items which are considered material to the Company's financial statements.

Investment in subsidiary undertakings

Investments in subsidiary undertakings where the Company has control are stated at cost less any provision for impairment. Control is achieved where the Company has the power to govern the financial and operating policies of an investee entity so as to obtain benefits from its activities.

Short-term deposits

Short-term deposits comprise deposits with UK banks for periods of up to twelve months. Short-term deposits are measured initially at cost and subsequently at cost or recoverable amount if lower. Interest is accrued evenly on an accruals basis.

Share-based payments

In accordance with FRS 20, when the Company grants options over equity instruments directly to the employees of a subsidiary undertaking, the effect of the share-based payment is capitalised as part of the investment in the subsidiary as a capital contribution, with a corresponding increase in equity.

Taxation

The charge for taxation is based on the loss for the period and takes into account taxation deferred.

Current tax is measured at amounts expected to be paid using the tax rates and laws that have been enacted or substantively enacted by the balance sheet date. Deferred tax balances are recognised in respect of all timing differences that have originated but not reversed by the balance sheet date, except that the recognition of deferred tax assets is limited to the extent that the company anticipates making sufficient taxable profits in the future to absorb the reversal of the underlying timing differences.

Deferred tax balances are not discounted.

3. Loss attributable to member of the Parent Company

As permitted by Section 408 of the Companies Act 2006, the Company's profit and loss account has not been included in these financial statements. The loss dealt with in the financial statements of the Parent Company for the year ended 31 December 2012 was £225,000 (six months ended 31 December 2011: loss of £113,000).

4. Directors' remuneration

The only employees of the Company are the executive Directors and all their costs are borne by its subsidiary undertaking.

In respect of Directors' remuneration, the disclosures required by Schedule 5 to the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 are included in the detailed disclosures in the audited section of the Directors' Remuneration Report on page 22, which are ascribed as forming part of these financial statements.

Notes to the Parent Company Financial Statements

for the year ended 31 December 2012 (continued)

5. Investments

	Investment in subsidiary undertaking £000	Loan to subsidiary undertaking £000	Capital contribution £000	Total £000
At 1 January 2012	140	14,543	722	15,405
Additions	-	2,163	193	2,356
At 31 December 2012	**140**	**16,706**	**915**	**17,761**

At 31 December 2012, the Company has an investment in the following subsidiary undertaking:

Name of company	Country of incorporation	Proportion of voting rights and ordinary share capital held	Nature of business
Synairgen Research Limited	England	100%	Drug discovery and development

6. Debtors

	31 Dec 2012 £000	31 Dec 2011 £000
Other tax and social security	**2**	3
Prepayments and accrued income	**7**	17
	9	20

All amounts fall due for payment within one year.

7. Creditors: amounts falling due within one year

	31 Dec 2012 £000	31 Dec 2011 £000
Trade creditors	**5**	24
Accruals and deferred income	**31**	24
	36	48

8. Share capital and share premium

	Note	Number of shares	Ordinary shares of 1p each £000	Share premium £000	Total £000
At 1 July 2011 and 31 December 2011		69,560,064	696	17,128	17,824
Issuance of ordinary shares	(i) (ii)	5,624,272	56	2,445	2,501
Costs of issuance of shares		-	-	(151)	(151)
At 31 December 2012		**75,184,336**	**752**	**19,422**	**17,824**

(i) 5,555,556 ordinary shares of 1p were issued on 23 July 2012 at a premium of 44p per share to finance the Company's ongoing interferon beta programme and to provide working capital for the Company. Funds raised net of expenses amounted to £2,349,000.

(ii) 68,716 ordinary shares of 1p were issued on 28 September 2012 at par following the exercise of share options under the Company's long term incentive plan (LTIP).

Details of the Company's share option schemes and long term incentive plan can be found in note 17 to the Group accounts on pages 37 and 38.

9. Reconciliation of movements in reserves and shareholders' funds

	Share capital £000	Share premium account £000	Profit and loss account £000	Shareholders' funds £000
At 1 July 2011	696	17,128	672	18,496
Loss for the period	-	-	(113)	(113)
Share-based payment credit	-	-	96	96
At 31 December 2011	696	17,128	655	18,479
Issuance of ordinary shares	56	2,445	-	2,501
Transaction costs in respect of share issues	-	(151)	-	(151)
Loss for the year	-	-	(225)	(225)
Share-based payment credit	-	-	193	193
At 31 December 2012	**752**	**19,422**	**623**	**20,797**

Corporate Directory

Company number
5233429

Directors
Executive: Richard Marsden, Dr Phillip Monk, John Ward

Non-executive: Simon Shaw (Chairman), Iain Buchanan, Dr Bruce Campbell, Paul Clegg, Prof. Stephen Holgate

Secretary
John Ward

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Independent auditor
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Arcadia House, Maritime Walk, Ocean Village, Southampton SO14 3TL

Bankers
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165 High Street, Southampton SO14 2NZ

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33 King William Street, London EC4R 9AS

Nominated adviser and broker
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Registrars
Capita Registrars
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Solicitors
Fasken Martineau LLP
17 Hanover Square, London W1S 1HU

Glossary

2' - 5' OAS
A protein produced within cells in response to IFN-β to prevent viral replication

Adenovirus
A virus that can cause respiratory disease (eg. the common cold), conjunctivitis and gastroenteritis

Airways (or bronchial tubes)
The tubes that carry air in and out of the lungs

Antibiotic
A drug that inhibits bacterial growth or kills bacteria

Anti-viral
Any substance that can either destroy viruses or suppress their growth

Apoptosis
A naturally occurring form of programmed cell death

Assay
A laboratory test to determine parameters such as the strength of a solution, the proportion of a compound in a mixture, the potency of a drug or the purity of a preparation

Asthma
A disorder in which the airways become episodically narrowed, leading to wheeze, shortness of breath, cough and chest tightness

B cell
A type of white blood cell that can produce antibodies

Biobank
A collection of samples from clinically-characterised volunteers comprising blood, induced sputum, bronchial biopsies and epithelial cells. These samples are used to develop the complex *in vitro* human disease models

Biomarker
A biomarker is a biochemical feature or facet that can be used to measure the progress of disease or the effects of treatment

Bioterrorism
Terrorism involving the intentional release or dissemination of biological agents

British Thoracic Society (BTS) Step classification system
A stepwise treatment regime (from steps 1 to 5, with 5 being the most severe) for treating asthma in Britain aiming to achieve optimum control without excessive medication

Broad spectrum antibiotic
An antibiotic that acts against a wide range of disease-causing bacteria

Bronchodilators
Medicines which relax the muscles around the airways, helping the airways to open up, so making it easier to breathe. There are several types of bronchodilators, of which short-acting beta-agonist drugs are the most commonly used

CD8+ T cell
A specialised type of white blood cell that can destroy virally-infected cells. The CD8 nomenclature refers to a particular type of receptor expressed on the cell surface

Chronic bronchitis
An inflammation of the airways accompanied by coughing and production of phlegm. The symptoms are present for at least three months in each of two consecutive years.
See COPD

Clinical Trial Authorisation or CTA
An authorisation from the MHRA to conduct a clinical trial

Compliance
The level of adherence to a recommended course of treatment or prescribed regimen

COPD
Chronic obstructive pulmonary disease covers two conditions: chronic bronchitis and emphysema. COPD usually results from long-term exposure to irritants to the lungs, of which the most prevalent is tobacco smoke. Unlike asthma, where airflow obstruction varies, in COPD airflow obstruction is usually irreversible

Coronavirus
A virus that can cause respiratory disease such as the common cold or SARS (depending on the type of coronavirus) and gastroenteritis

DNA
Nucleic acid that carries genetic information in the cell

Emphysema
A destructive process involving the air spaces (alveoli) of the lungs, which leads to over-inflation of the lung and, when sufficiently advanced, causes breathlessness and lack of oxygenation of blood. See COPD

Epithelium
In the lung, the epithelium is a thin layer of cells which lines the airway tubes in order to protect and regulate the tissue underneath

Exacerbation
A rapid deterioration of a chronic disease that makes the symptoms worse

Gene
A hereditary unit consisting of a sequence of DNA that determines a particular characteristic of a living organism

H1N1
A subtype of influenza A and the most common cause of 'flu' in humans. The recent 'swine flu' is a H1N1 virus. The 'H' stands for haemagglutinin, which is a protein on the surface of influenza which allows the virus to enter the cell, thus causing infection. The 'N' stands for neuraminidase, a protein on the surface of influenza, which allows the newly-formed virus particles to be released from the cell

H5N1
Also known as 'bird flu' or 'avian influenza' is a subtype of the influenza A virus which can cause serious illness in humans

Hepatitis
Inflammation of the liver that can occur as a result of a viral infection or exposure to harmful substances such as alcohol

IFN-β
Interferon beta is a natural protein found in the body which helps to regulate the immune system and fight off viruses. IFN-β is currently marketed by a number of companies as an injectable therapy for the treatment of multiple sclerosis

Influenza-like illness
Set of symptoms presenting similar to those for influenza of which influenza may or may not be the cause

Influenza
A contagious viral infection of the respiratory tract, leading to fever, headaches, sore throat, congestion of the nose and body aches

Interferon stimulated genes (ISG)
Genes up-regulated by interferon

In vitro
Carried out in the laboratory, e.g. in a test tube or culture plate

***In vitro model* (complex)**
A research model which contains more than one cell type and allows the study of interactions between different cell types and 'test' agents relevant to the disease or a therapy

IP-10
A protein released by cells in response to IFN-β which attracts other cell types involved in anti-viral defence of the lungs

Long acting beta agonist
An asthma drug that acts to relax (open) the airways for 12 or more hours

Lower airway
The airway tubes in the lung running from the throat down, ending in the air spaces (alveoli) where gas exchange occurs

Macrophages
Phagocytic (i.e. cells that can engulf other cells and cell components) white blood cells involved in cellular clearance and inflammation

MHRA
The Medicines and Healthcare products Regulatory Agency; a UK government body tasked with ensuring that medicines and medical devices work and are safe

mITT population
Modified intention to treat population. In SG005, mITT was defined as the population who were randomised with at least one dose of study medication and had a common cold as confirmed by the Jackson Cold Score

Morbidity
Incidence or prevalence of a disease

Mucus
A gelatinous substance normally produced by the airway cells to protect and hydrate the airway surface from harmful agents

Multiple sclerosis (MS)
A disease affecting nerves in the brain and spinal cord, causing problems with muscle movement, balance and vision

MxA
A protein produced within cells in response to IFN-β to prevent viral replication

Natural Killer (NK) cell
A specialised type of white blood cell that can respond to virus infection

Neuraminidase inhibitor
A class of drug used to treat influenza by interfering with virus release from the infected cell by blocking neuraminidase (a protein found on the virus cell surface), of which Tamiflu® and Relenza® are examples

Neopterin
An anti-viral biomarker

Pandemic influenza
An influenza pandemic occurs when a new influenza virus appears against which the human population has no immunity, resulting in epidemics worldwide with enormous numbers of deaths and illness (definition on world health organization website)

Parainfluenza
A virus that can cause the common cold. Parainfluenza is also responsible for 75% of croup cases in children

Patent Cooperation Treaty or PCT
A system by which a patent application can be filed in many different countries at once. A single international application is filed initially at a receiving office. After a search and publication, the application may be converted to a series of national applications in different countries

Peak expiratory flow
A lung function test that measures a person's ability to breathe out air

Phase I Clinical Trial
A study conducted in volunteers to determine the biological effects of a drug, especially safety and tolerability

Phase II Clinical Trial
A study in patients with the aim of making a preliminary determination of the efficacy of a drug to provide proof of concept and/or to study drug dose ranges

Phase IIa Clinical Trial
Used to describe a Phase II clinical trial evaluating efficacy, adverse effects and safety risks

Phase IIb Clinical Trial
Used to describe a subsequent Phase II clinical trial that also evaluates dosage tolerance and optimal dosage frequency in a larger number of patients than enrolled in a Phase IIa trial

Phase III Clinical Trial
A full scale clinical trial to determine drug efficacy and safety prior to seeking marketing approval

Phlegm
See Sputum

Placebo
An inactive substance or preparation used as a control/comparator (in a clinical trial for example) to determine the effectiveness of a medicinal drug

Glossary (continued)

Primary endpoint
The most important measure (endpoint) assessed in a clinical trial

Prognostic biomarker
A biomarker that can predict the future course of a disease or response to a therapy

Prophylaxis
A measure taken for the prevention of a disease or condition

Protein
Large molecules made of smaller biological units known as 'amino acids'. Proteins are responsible for the majority of the function and much of the structure of living things, including humans

Pulmonary
Relating to, functioning like, or associated with the lungs

Rhinovirus
Rhinoviruses are the most common viral infective agents in humans. The most well known disease caused by rhinoviruses is the common cold

RNA
Nucleic acid that is involved in protein synthesis and transmission of genetic information

RSV
Respiratory syncytial virus (RSV) can cause both mild respiratory illness (e.g. the common cold) and serious respiratory tract infections (such as bronchiolitis and pneumonia). More severe infections can occur in the very young, the very old and those with weakened immune systems

Safety study
See Phase I Clinical Trial

SARS
Severe Acute Respiratory Syndrome (SARS) is a type of coronavirus that can cause potentially fatal respiratory illness. SARS was first reported in Asia in 2002

Seasonal Influenza
Seasonal flu is a yearly outbreak of flu infection, caused by a flu virus. The seasonal flu is somewhat different every year, as flu viruses are always changing

Secondary/exploratory endpoint
The second most important (or additional) measure (or endpoint) assessed in a clinical trial

SG004
A double-blinded, placebo-controlled, single and multiple dose-escalating Phase I study to assess the safety and tolerability of inhaled IFN-β in controlled asthmatic male and female subjects

SG005
A randomised, double-blinded, placebo-controlled Phase II study, comparing the efficacy and safety of inhaled IFN-β to placebo administered to asthmatic subjects after the onset of a respiratory viral infection for the prevention or attenuation of asthma symptoms caused by respiratory viruses

Sputum
The thick mucus which is coughed up by a person. Sputum contains cells and soluble substances secreted into the airways (bronchi), some of which can mediate disease if present in amounts different to normal. Sputum is also commonly called phlegm

Steroids
A group of chemicals that is produced naturally in the body by the adrenal gland. In asthma, steroids are given by inhalation or by mouth to reduce the inflammation of the airways

Systemic absorption
The fraction of drug that reaches the systemic circulation

Upper airway
The tubes in the nose and neck which conduct air into the lung

Toll-like receptor agonists
Novel anti-viral drugs that activate Toll-like receptors (TLRs). TLRs regulate the immune system in response to pathogens

Type I IFNs
A classification of interferon that includes IFN-β

Virion
A virus particle which has the ability to infect cells, consisting of an outer protein shell called a capsid and an inner core of nucleic acid

Virus
A virus is a non-living small particle that infects cells in biological organisms. Viruses can reproduce only by invading and controlling other cells as they lack the cellular machinery for self-reproduction

Wheeze
A whistling sound made by a person who has airflow obstruction when breathing

synairgen plc

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