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Biotechnology Sector
Listing: PLUS (SCLP)

Scancell

Scancell is developing a product platform that uniquely stimulates the immune system to treat disease. The corporate strategy is simple – spend the next two years conducting "proof of concept" studies in melanoma, run animal trials in parallel to confirm it as a platform technology, and then sell off the company and technology to the highest bidder.

Initiation Report

Objective Capital Research Limited
Token House
11-12 Tokenhouse Yard
London EC2R 7AS
Tel:+44-(0)870-080-2965
Fax: +44-(0)203-137-0076
US toll-free: 1-888-802-7215
editor@objectivecapital.com

Corporate: www.ObjectiveCapital.com
Research: www.ObjectiveCapital.co.uk

Contents

I certify that this report represents my own opinions.

Scott Davidson, *CFA*
scott@objectivecapital.co.uk

Dr Alan Warrander
alan@objectivecapital.co.uk

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Key Points

8 September 2009
Price: 45.5p

Scancell is developing a product platform that uniquely stimulates the immune system to treat disease. The corporate strategy is simple – spend the next two years conducting "proof of concept" studies in melanoma patients, run animal trials in parallel targeting angiogenesis to confirm it as a platform technology, and then sell off the technology to the highest bidder. To use a baseball analogy, Scancell is heading to the plate and swinging for the fences. With a differentiated technology and a focused plan, we think this Company has what it takes to circle the bases.

- ***Attractive model targeting both drug and platform***
  The Holy Grail in medicine is always to develop the master key. In other words, the goal is to find the underlying cause of disease and target your therapy there. Using a proprietary DNA vaccine approach, Scancell is working towards creating such a platform technology that, if successful, will garner a premium valuation in the marketplace.

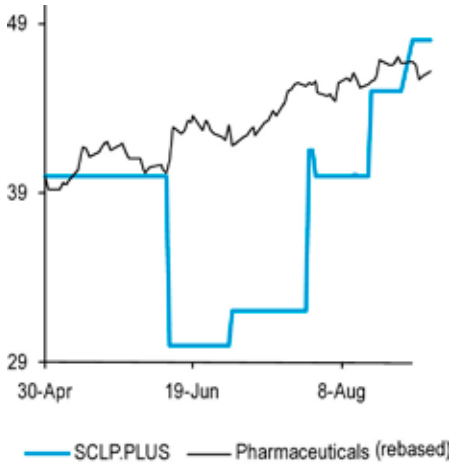
- ***This is not "me too" technology***
  In both viral infection and tumour models, only high avidity immune responses mediate viral clearance and tumour eradication. Previous failed attempts in the field have simply focused on generating T cell responses rather than how effective those responses are. Scancell is unique in that its preclinical data has shown the ability to generate T cell responses that work - high frequency, high avidity immune responses that actually delay tumour growth and enhance survival.

- ***'Proof of Concept' Trial is the key that could unlock the kingdom***
  The bet with this Company is relatively straight-forward – the trial hits its targeted endpoints and the Company licenses the technology to a partner or even sells the entire franchise to the highest bidder or it's back to the drawing board.

- ***Valuation is conservative, with blue sky potential***
  Our investment thesis is conservative, with our licensing deal estimates predicated upon Scancell as a single product Company. The goal, with early animal trials on SCIB2, is to demonstrate breadth of application. While relatively inexpensive, successful data in these trials would be worth its weight in gold.

- ***A high risk, high reward proposition***
  As history has shown, the path to market for therapeutic cancer vaccines is not going to be an easy one. Many bodies litter the road and the science is still very much evolving, but to the winners go the spoils. Using a conservative set of assumptions and a heavily discounted valuation methodology, we still derived a base case value for Scancell of £0.59 per share.

Price chart (p)



Current fair value of equity	
Expected value	£5.27m
Value per share	**£0.59**
Optimistic scenario	£13.7m
Value per share	**£0.95**

Company details	
Quote	
Shares	
- PLUS	SCLP
Shares issued (m)	8.9
Fully diluted (m)	9.6
Website:	*www.scancell.co.uk*

Analysts:
Scott Davidson, CFA
scott@objectivecapital.co.uk
Dr Alan Warrander
alan@objectivecapital.co.uk

Overview

Scancell (PLUS: SCLP) is focused on producing a successful therapeutic DNA vaccine. The technology may have potential usefulness in the treatment of numerous cancers and infectious diseases. While a range of other DNA vaccines are under development by various companies, none are yet approved.

The corporate focus has evolved from antibodies to DNA vaccines

Founded in 1996, Scancell initially focused on building a portfolio of therapeutic antibodies. Ten years later, the antibodies were sold and the Company concentrated its efforts on advancing a unique approach to therapeutic vaccines it had formulated several years earlier. Scancell's ImmunoBody® technology uses DNA constructs to deliver specific antigens to the immune system, triggering an effective T cell response to attack tumours and fight off disease and infection.

Scancell's approach offers potential for not only a drug, but a platform technology

While the first drug candidate is targeted at melanoma, the expectation is for this technology to represent a platform technology with the ability, by changing the expressed epitopes, to both prevent and treat a wide range of various cancers and infectious diseases. Scancell intends to drive its second development programme, SCIB2, through animal studies in an effort to validate the multifaceted functionality of the technology. SCIB2 is targeting angiogenesis and could have the versatility to attack a wide range of solid tumours. Beyond these two ImmunoBody® product candidates, Scancell is also exploring the potential of forging co-development deals with other companies to develop DNA vaccines for their proprietary targets utilizing the ImmunoBody® platform technology.

The bet is on the importance of high avidity T cells

For years, a variety of cancer immunotherapies utilizing a number of different approaches have arisen that seek to stimulate an immune response. Cellular responses are common, but what is elusive is the ability to control tumour growth or the spread of infection. The scientific literature suggests that the stimulation of high avidity T cells may be the critical component in mediating viral clearance and eradicating established tumours. Scancell's lead product, SCIB1, has repeatedly shown a powerful anti-tumour effect with high avidity T cell response in animals.

Clear goal in place to prove the concept and then complete the hand-off

In the case of Scancell, the exit strategy is to license the technology or sell the entire company well before a drug would ever reach the commercial markets. Successful 'proof of concept' studies have historically garnered the interest of larger biopharmaceutical companies with broad research and development programmes. Scancell expects to receive clearance to begin these studies for SCIB1 early next year, with the anticipation that the trials will take approximately two years to complete. At that point in time, or even prior, Scancell will look to negotiate a deal that could include a sizable up-front payment, milestone payments tied to development achievements, and a high single to low double-digit royalty on commercial sales. The path of selling the entire company could also be an option.

Strategic partnerships provide drug delivery vehicle

The potency of DNA vaccines can be significantly enhanced by the nature of the delivery vehicle. Scancell understands the importance of an effective delivery methodology as it readies its lead product for the clinic. Over the past several months, the Company has signed deals with two separate drug delivery technology companies. The first uses electroporation technology to enhance the intracellular delivery of the DNA vaccine and will be used in the SCIB1 clinical trials. The second relies on a platform technology that enhances the immunogenicity of antigens and will be utilized in Scancell's programme targeted at infectious diseases.

Limited need for capital a big plus

The Company is in good financial shape with approximately £1 million in the bank and little debt, but the cost of upcoming clinical studies will require an infusion of capital. Scancell will seek an equity raise of between £1.5 and £2 million later this year and intends to have the money in hand prior to initiating its clinical trials for SCIB1 in April of 2010. With the expectation that its clinical work on SCIB1 will require approximately two years of time and £1 million, the purpose of this capital raise is to carry the Company to its first major licensing deal or buyout.

The pathway may be clear, but the potholes are many

Risk is inherent in any early stage biotech company and this one is no different. Over the next two years, the Company will need to tap the capital markets for funding, navigate the challenges of the regulatory environment, and ultimately present data convincing enough to attract a third-party suitor. Cross those hurdles successfully and the Company still must deal with the risk that the immune response is not necessarily indicative of anti-tumour response. In other words, success in its early stage clinical trials may not translate to clinical effectiveness in more definitive Phase II trials and beyond.

Valuation is in colour, not black-and-white

We have attempted to quantify the magnitude of the opportunity, discounted to account for the risk involved. The anticipated up-front and milestone payments are intended to represent industry norms although, in reality, the variability between individual licensing agreements is incredibly diverse. There is also a high probability that the eventual market opportunity for this technology will expand beyond the melanoma market.

Our conservative approach is to assess the value of the SCIB1 programme in late stage patients based on the assumption that the company will licence it out at the end of its current trials. The "blue sky" for investors is obviously the potential that the company will be acquired in total at that stage – and at a substantial premium for the technology platform.

Valuation

While Scancell may prefer to be bought outright upon completion of its early clinical trials, we have chosen to value the Company based upon a licensing partnership that includes up-front payments, milestone payments and royalties on commercial sales of SCIB1. We have chosen not to explicitly value the SCIB2 asset, but instead consider it as demonstrating the potential for a "blue sky" acquirer of the technology platform.

We have developed a timeline for expected up-front and milestone payments and included a royalty estimate in our model, in both a base case and a more optimistic set of scenarios. As common in evaluating biotech assets, we have applied significant probability-based discounts estimated from industry standard development-based probabilities of success and further discounted the expectation for cash inflows to the Company using a standard discounted cash flow approach.

In our base case we assume that if Scancell delivers efficacious results from its early clinical studies it will ultimately collect up-front and net milestone payments totalling US$183 million and net royalties at a rate of 7% on commercial sales of product into the melanoma market. Our view is based upon a scenario in which SCIB1 has demonstrated clear proof-of-concept in melanoma patients and reflects current market partnering arrangements with similar characteristics. We have also assumed that the resulting commercial product will be in conjunction with the Ichor delivery device. In essence, we are valuing Scancell as a single product company and considering the potential for a platform technology with SCIB2 as pure blue sky.

We have focused particularly on the recent GlobeImmune and Celgene deal. Although the technology is not directly similar, GlobeImmune is working on targeted molecular immunotherapy for the treatment of cancer. Under the terms of the agreement, GlobeImmune will receive a US$40 million upfront payment from Celgene and will be eligible to receive over US$500 million in development and regulatory milestones, double-digit royalties and additional milestone payments based on net sales of the licensed product candidates. Our take is that GlobeImmune's lead programme targeting pancreatic cancer might have a slightly larger clinical data package than SCIB1 at the point that Scancell expects to license it. The melanoma market that Scancell is initially targeting is slightly larger in size and the clinical need for an efficacious treatment is comparable.

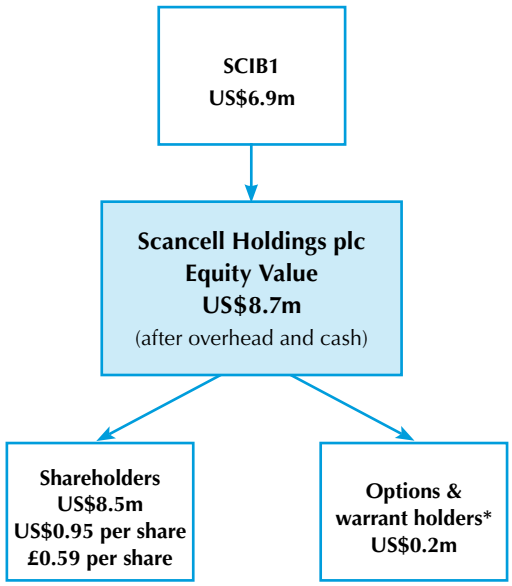
In addition, GlobeImmune also has a pipeline of three additional cancer products at the preclinical stage along with three infection programmes showing proof-of-concept, whereas we expect Scancell to only have SCIB2 in the preclinical phase at the time of a deal. As a result, we are reasonably comfortable forecasting a base case scenario that delivers up-front payments and net milestones well below those received by GlobeImmune, with a net royalty rate at the low end of the range.

Fair value summary (US$m)

Scenario	Core	Optimistic
Development drugs		
- SCIB1	6.9	12.1
Less: overhead	2.4	2.4
Expected value of pipeline	4.5	9.7
Add: other assets*	1.7	1.7
Add: starting cash + new funds	2.5	2.5
Total current value for firm	8.7	13.9
Less: Bank & other debt	0.0	0.0
Total value to equity claims	8.7	13.9
Less: warrants & options	0.2	0.2
Ordinary equity holders	8.5	13.7
Value per share (US$)	**0.95**	**1.53**
Value per share (£)	**0.59**	**0.95**

* expected risked value of milestones due from Arana

Components of Scancell's entity value



* includes expected value of contingent option claims

Summary of detailed SCIB1 valuation (US$m)

SCIB1	Core	Optimistic
*Royalty revenue**		
EV of royalties	**62.9**	**128.2**
Likelihood of success (PoS)	**7%**	**7%**
EMV of royalties	**4.2**	**8.6**
Add: EMV of upfront payments**	1.4	2.2
Add: EMV of milestone payments**	3.7	5.1
less: EMV of development costs**	0.5	0.5
EMV***	**8.7**	**15.3**
per share		
- US$ ps	0.98	1.71
- £ ps	0.61	1.06
After tax EMV	**6.9**	**12.1**

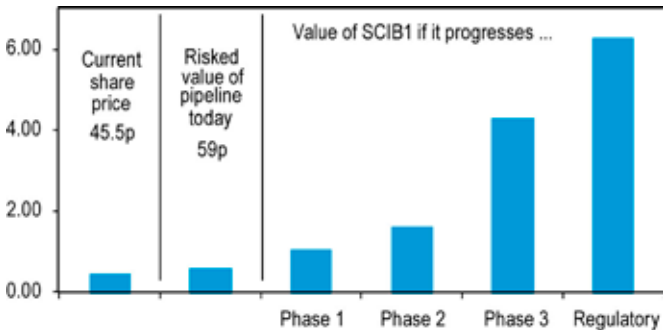
* EV = expected value; EMV = expected monetary value (i.e., risked expected value)

** net upfront, milestone and development costs have been risked based on probability of being incurred or received

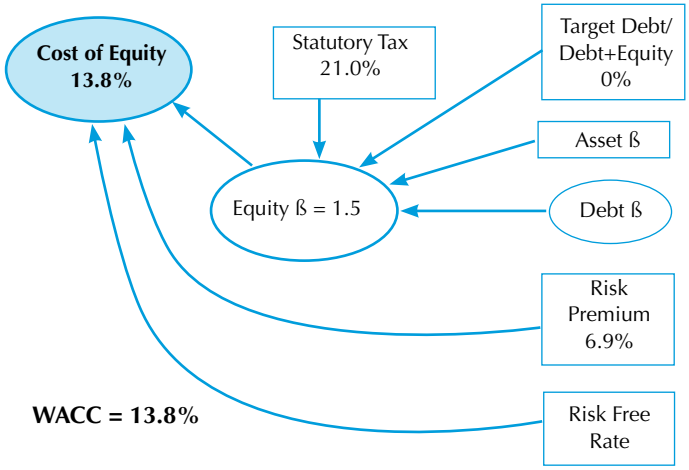
*** royalty, upfront and milestone payments are based on a standalone licencing deal and assume no premium for the technology platform

Note: *see page 19 for revenue forecasts and page 26 for detailed SCIB1 valuation*

Current EMV and value if pipeline is successful (£ps)



Weighted cost of capital



With the specifics of most licensing arrangements kept close to the vest, we realize the imperfect nature of this analysis and, therefore, have tried to remain conservative in our outlook.

Our alternative case view assumes slightly more aggressive market share capture by SCIB1, an up-front and net milestone payment package totalling US$253 million and a net royalty of 9%. Our goal here is to portray a market that is more comfortable with the concept of a DNA vaccine at the time of licensure. Successes in the field will undoubtedly raise the profile of the development work done by Scancell and, in our estimation, drive up the price the Company can expect to receive in a partnership deal or eventual sale.

In both scenarios, we have taken the view that biosimilars will be existent in the market at the time of patent expiration for SCIB1 and that the subsequent price deterioration will amount to 25%. Our expectation is for price deterioration to occur at a more modest level than is currently seen with small molecules, in part due to the greater complexities and costs involved in developing and manufacturing the biosimilars.

We have not accounted for the potential for SCIB1, if successful, to be used in earlier stages to prevent the re-occurrence following remove of an initial melanoma tumour. While this would obviously necessitate expensive further trials, and would be dependent on any side effect profile, the market potential could be substantial.

Our analysis suggests a base case value for Scancell shares of £0.59 per share and £0.95 per share based upon a more optimistic set of assumptions. In achieving these valuations, the challenge for Scancell will be to deliver convincing clinical data on its lead drug candidate.

Key Risks

Regulatory uncertainties

Scancell is on track to submit its Clinical Trials Application (CTA) to the UK Medicines and Healthcare Regulatory Agency (MHRA) in early January 2010. The general rule-of-thumb is for the MHRA to turn around the paperwork within 30 days, although the possibility is there for additional questions at that time. Beyond the risk involved in seeking approval to initiate clinical trials, Scancell must also contend with the eventual interpretation of the trial design and subsequent data by a future suitor or licensee.

Crowded field

Therapeutic cancer vaccines are in various stages of development for at least 18 different tumour types. Melanoma, in particular, has seen the most activity, to date. While the crowded landscape brings the added risk of competition for licensing dollars and eventual commercial sales, increased activity in the field also validates the scientific merit of the approach. While perhaps not ideal for the patient, cancer therapies have a history of only providing incremental and inconsistent benefit to those afflicted with the disease and, therefore, there is the strong likelihood that multiple companies and multiple approaches will be able to share in what is now a very large, but underserved, market opportunity.

Need for additional capital

Currently, Scancell has approximately £1 million in the bank. Although the monthly burn is minimal at roughly £70,000, the costs associated with the upcoming clinical trials will require the Company to secure additional funding. With an estimated cost of £1 million to complete the Phase I/IIa trials combined with the ongoing monthly burn, it is expected that Scancell will seek to raise at least £1.5 million before initiating the trials. Although its current cash holdings could carry the Company well into the first phase of its trials, the prudent course of action is to secure the funding later this year and provide the Company with enough capital to complete its Phase I/IIa trial.

As the capital markets have shown over the past year, however, no certainty can be assigned to the task of raising new funds, particularly for an early stage company with no revenue. With the need for new capital as a gating issue to the initiation of clinical studies, timing is critical and the amount of time necessary to complete financing deals of late has lengthened as macro economic conditions have suffered. Scancell has confidence that its existing shareholder base is willing to step up to the plate in this round of financing, however, and that may, in fact, accelerate the timing of a deal.

Clinical risk

The science has shown efficacy in animal trials, but has yet to enter humans. In other words, the success in the laboratory now needs to be translated into the clinic. Additional challenges in the clinic, such as patient selection and adverse events, bring added risk to the equation. There is also no certainty that an immunological response in humans will be great enough to deliver a clinical benefit. Recent Phase III trial failures of cancer vaccines by Favrille and Genitope drive home this point.

Partnering risk

Scancell is clear in its desire to license SCIB1 after completing the Phase I/IIa trial, if not before. In a best case scenario, the studies will have shown a strong immunological response in man or, in other words, a "proof of concept." This is a significant, value-creating milestone for early stage drug discovery companies and would likely interest multiple parties in licensing the technology or possibly even acquiring the entire Company. Of course, the devil is in the detail – in this case, in the data – and the failure to secure a satisfactory licensing deal (or several) within the next two years would place the Company in the precarious position of having to consider a sizeable capital raise to fund additional clinical studies or, worse yet, sell off its assets in a fire sale.

Scancell Holdings

Scancell Holdings Plc (PLUS: SCLP) was established in 1996 to further develop the research of Professor Lindy Durrant and her group at Nottingham University. Professor Durrant is a leading figure in the field of cancer immunotherapy with a background in cancer monoclonal antibodies and, supported by funding from Cancer Research UK, has successfully taken a number of immunotherapies into clinical trials. Scancell's initial focus was on building a portfolio of therapeutic antibodies. In 2006, these antibodies were sold to Peptech Ltd (now Arana Therapeutics plc) for £2 million, with an additional payment of £2.85 million contingent upon one of these molecules entering clinical trials by December 2011. ART104, the lead molecule in this arrangement, was partnered on to Kyowa Hakko who aim, subject to successful preclinical development, to initiate clinical trials with it sometime around 2010/2011.

Scancell has since turned its attention to concentrate on the research and development of another approach to therapeutic vaccines - DNA vaccines. In September 2008, Scancell listed its shares on the UK PLUS market and raised additional financing of £1.6 million to support development of the lead product, SCIB1 which is targeted against malignant melanoma and further develop the ImmunoBody® platform with additional products.

The core asset of the Company is its ImmunoBody® platform technology – an elegant, unique approach to efficiently killing tumours or infected cells. With impressive animal data in hand, the Company makes no bones about its intentions to sell itself and preferably sooner, rather than later. The key inflection point for adding value to the Company, however, is undoubtedly its successful completion of two Phase I/IIa clinical trials for the treatment of melanoma.

The first stage will be designed to determine optimal dosing and prove the safety profile of the technology and is expected to span a full year at an approximate cost of £500,000. The second stage, considered the 'proof of concept' study, is intended to demonstrate a high avidity T cell response in humans and will also likely last a year at a cost of £500,000. Scancell intends to receive clearance to initiate the clinical trial in the early part of 2010, with a targeted first enrolment taking place around April 1st.

To maximize its value to a potential suitor, Scancell is also currently working to build out its product pipeline beyond its melanoma therapy and expand its network of relationships in the industry. Its second ImmunoBody®, SCIB2, is an anti-angiogenic vaccine designed to treat solid tumours. The goal is to move this project into animals next year and have convincing preclinical data demonstrating the range of the technology in hand when it comes time to negotiate with a potential licensor or acquirer.

In July, Scancell inked a licensing agreement with Merck Serono for two patents required for continued development work on protein-based ImmunoBody® vaccines. As part of the agreement, Scancell granted Merck Serono an option to negotiate an exclusive license to the ImmunoBody® technology for up to five of Merck Serono's targets. While the Company has focused its efforts primarily on DNA-based vaccines and intends to continue doing so in the near-term, the value of the agreement to Scancell may ultimately be more in the relationship made than in the strategic importance of the two patents at issue.

In the interim, and throughout next year, the Company hopes to sign targeted co-development deals, most likely with companies disappointed in their own cancer vaccine programmes and seeking the enhanced potential contained in the ImmunoBody® platform technology. It is possible to envision a scenario whereby Scancell enhances the immune response of a third party drug candidate by incorporating its expertise and ultimately forces the third party to re-acquire the rights to the candidate for a price. While the cash amounts of such deals are often highly variable and uncertain, the potential is still there and at a modest cost to Scancell.

In the course of forging these relationships, the objective of the Company, however, is to garner third party endorsements as much as it is to book revenue. Scancell does also recognize the risk of compromising a potential corporate sale by engaging in too many complicated licensing deals. The hope is to utilize these relationships to ultimately amass a pool of potential acquirers of the Company's assets.

Why target cancer

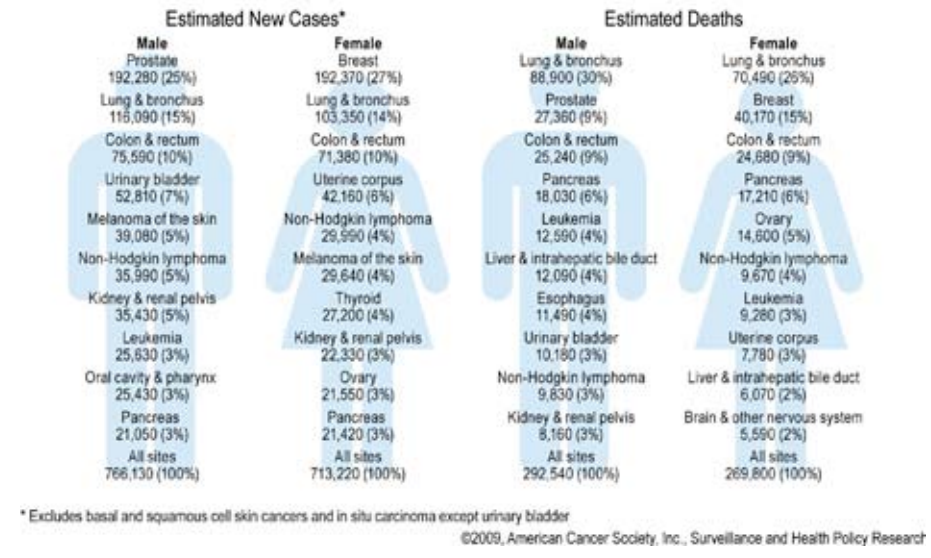
Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. Cancer is caused by both external factors (tobacco, infectious organisms, chemicals, and radiation) and internal factors (inherited mutations, hormones, immune conditions, and mutations that occur from metabolism). These causal factors may act together or in sequence to initiate or promote tumour growth and spread.

Cancer is a high profile disease. It is second only to cardiovascular disease in terms of mortality. Currently, over 3.5 million new cases are diagnosed in the US and Europe each year; in the UK, every two minutes someone is diagnosed with cancer and sadly, every four minutes another person dies of cancer in the UK. In the US, The National Institutes of Health estimates the overall cost of cancer in 2008 at US$228.1 billion:

- US$93.2 billion for direct medical costs (total of all health expenditures)
- US$18.8 billion for indirect morbidity costs (cost of lost productivity due to illness)
- US$116.1 billion for indirect mortality costs (cost of lost productivity due to premature death).

Nevertheless, cancer can and is treated successfully through a combination of surgery, chemotherapy, including hormonal and biological treatment, and radiotherapy. Half of people diagnosed with cancer now survive for more than five years. The average ten-year cancer survival rate has doubled over the last 30 years reflecting progress in diagnosis and improvements in treatment.

New cancer cases and deaths by site (2009 US estimates)



Source: Cancer Facts and Figures, 2009 American Cancer Society

Immunotherapy primer

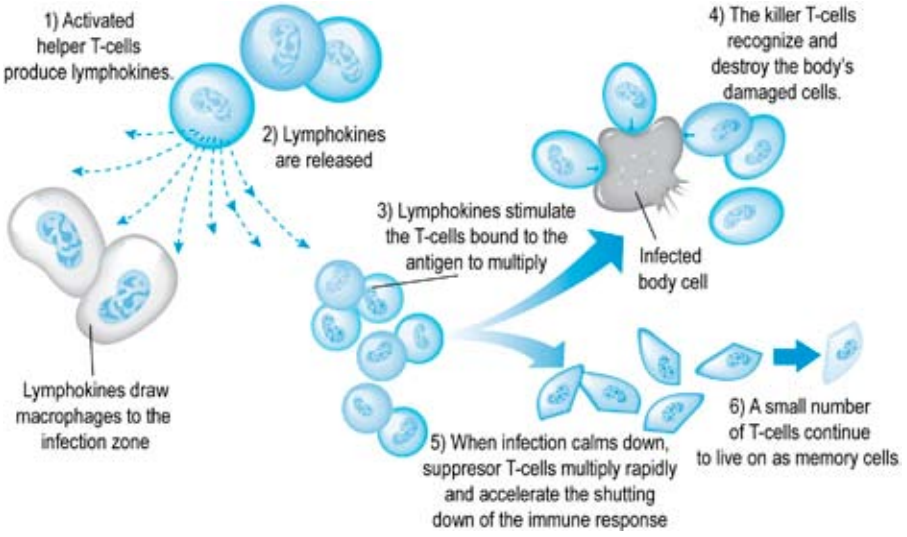
Immunotherapy is based on the body's natural defence system which has evolved as a protective mechanism against a variety of pathogens. The immune system responds to the environmental factors it encounters on the basis of discrimination between self and non-self, initiating a cascade of biological processes which then ensues to remove the insult to the system. Memory of previously seen pathogens allows the immune system to mount a swift response to re-attack. This feature is the basis of "prophylactic" or preventative treatment. Suitably treated disease cells containing disease specific antigens are administered in order to generate an immune response and protect an individual against the occurrence of certain diseases, e.g., MMR (measles, mumps and rubella) vaccine administered to infants and the recently introduced HPV vaccines, Gardasil and Cerivix given to young girls to protect against cervical cancer.

The immune response works through a series of reactions involving both "humoral" and "cellular" components.

Humoral response is mediated through antibody production and activity. Successful examples of antibody therapy in the cancer field are Avastin (bevacuzimab, which recognizes the VEGF receptor on some colorectal, breast and lung cancer cells) and Herceptin (trastuzumab, which recognizes the HER-2 receptor on certain breast cancers). Together, these two drugs alone accounted for over CHF5.5 billion in sales for Roche in the first half of 2009.

Cellular response involves the activation of macrophages, natural killer cells (NK), antigen-specific cytotoxic T-lymphocytes, and the release of various cytokines in response to an antigen.

T cells carry the war to its conclusion



Source: www.miracleofthebloodandheart.com/8.htm

Tumour immunology

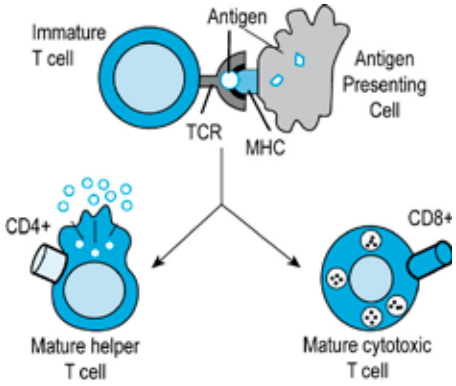
Tumour (cancer) cells are essentially the patient's own cells that have begun to grow, divide and spread without proper regulatory control but none the less, may be sufficiently different to be recognised and attacked by the immune system. The immediate goal of cancer immunotherapy is the development of methods to harness and enhance the body's natural tendency to defend itself against malignant tumours. Instead of prevention, cancer immunotherapy is designed to treat established cancer and prolong patient survival.

Tumour cells are derived from normal cells due to mutation of the DNA by some mechanism. These mutated cells may possess unique antigenic proteins which are not present on normal cells and can be used to selectively identify them - tumour specific antigens. Alternatively, there may be over-production of certain normal antigens (tumour associated antigens) which may also be a means whereby the immune system can identify and differentiate the tumour cell population.

The reason that tumours are able to develop and grow are that they possess a number of mechanisms to try and avoid detection or blunt the activity of the immune system. Tumour cells often lack molecules such as B7, a membrane bound protein involved in the stimulation of T cells or adhesion molecules that are necessary for them to interact with CD8 T cells. Tumours can also shed their antigens or change their structure spontaneously (antigenic variation) to avoid immune system elimination. Antibodies to tumour surface antigens may promote tumour survival (enhancing antibodies) if they bind without being cytotoxic, thereby hiding the tumour antigens from T cells and inducing the tumour to down-regulate tumour antigen expression. Some tumours actively suppress the immune response by producing TGFβ, a suppressive cytokine that inhibits cellular immunity.

The key challenges therefore in cancer immunotherapy are to firstly induce specific cytotoxic T lymphocytes (CTL) to recognize differential antigens on the tumour and secondly, to ensure that the CTLs are of sufficient potency to overcome any resistance and go on to kill the cells. There is a second group of T lymphocytes known as helper cells which are involved in the activation and growth of cytotoxic T cells. They are also key orchestrators of the immune response and are the first to arrive at the tumour, releasing pro-inflammatory cytokines and chemokines to recruit more helper and cytotoxic T cells.

Antigen presentation

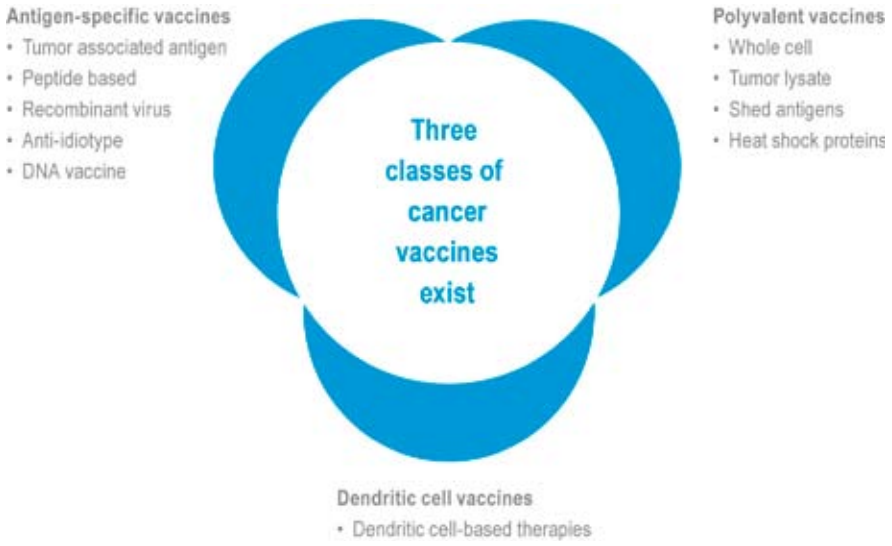


Source: Wikipedia

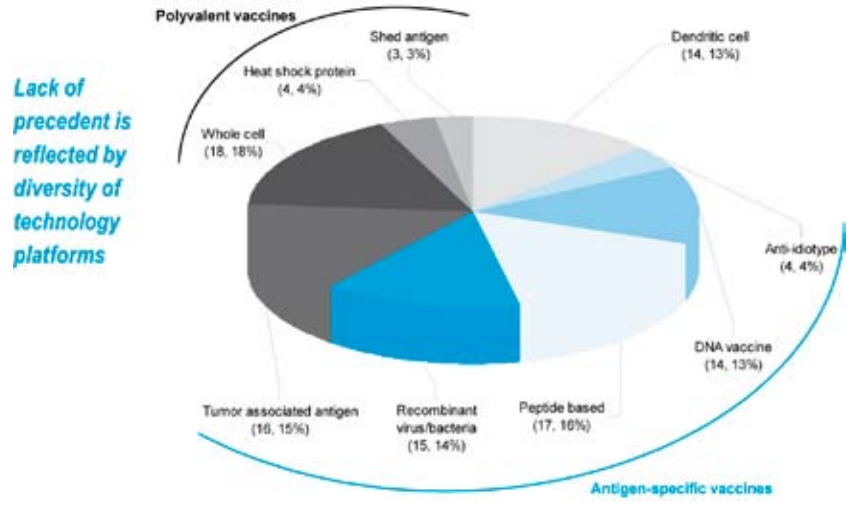
For a good number of years now, a variety of approaches have been used to try and stimulate the immune response through administration of whole cells, cell fractions or individual tumour antigens.

A range of technologies have been employed to try and produce successful cancer vaccines as illustrated in the accompanying table. To date, there has been limited success and a good number of failures with cell responses that fail to control the growth of the tumour or infection. This is thought to be at least in part related to the frequency and avidity of the immune response. Avidity is a measure of the strength of the binding between a T cell and a target cell. This binding, which is reversible, is dependant on how well the relevant areas of the cells fit together, how many linkage sites there are and how strong the individual links are. Avidity can be measured by determining how much antigen peptide is needed to activate the immune response. It has been found that to clear both viral infection and eliminate tumours in model systems, effective CTLs have to be of high avidity.

Three classes of cancer vaccines



Wide range of cancer vaccine technologies



Source: Datamonitor Pipeline Insight Therapeutic Cancer Vaccines Dec 2006

Why do we want high avidity T cells?

High avidity T cells are effective as they:

- proliferate, secrete γIFN, IL-2 and TNFα and develop into fully functional T cells capable of cell killing.
- are recruited into the memory pool
- mediate viral clearance
- eradicate established tumours
- are stimulated by low antigen doses such as early infections, tumour initiation and
- appropriate vaccination such as ImmunoBody®

Low avidity T cells are ineffective as they:

- proliferate and secrete γIFN but they do not develop into fully functional T cells capable of cell killing.
- are not recruited into the memory pool
- do not mediate viral clearance
- do not eradicate established tumours
- are stimulated by high antigen doses such as chronic infections, established tumours
- or inappropriate vaccination

Source: Scancell

How does Scancell's technology work

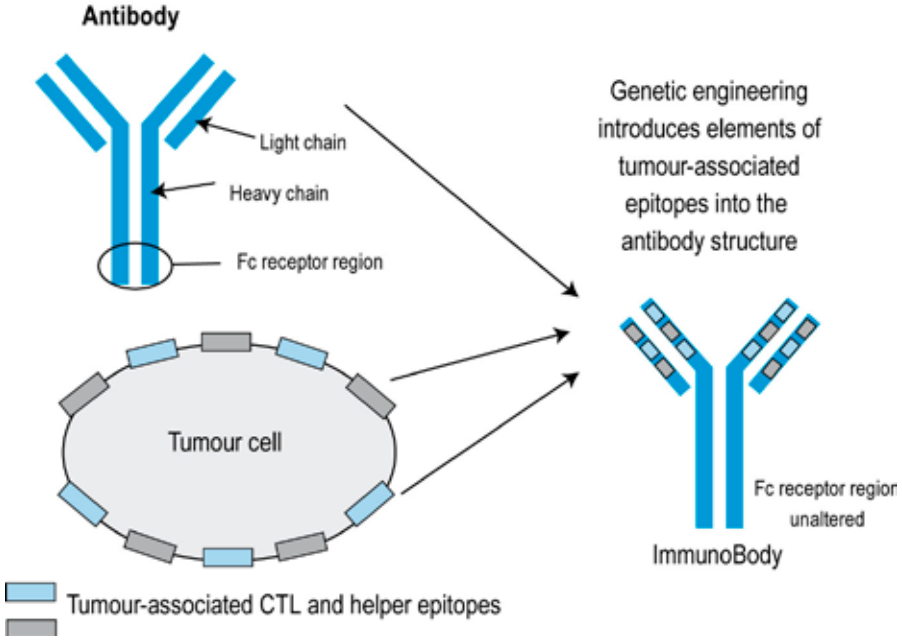
Scancell has adopted a specific and proprietary DNA vaccine technology, ImmunoBody®, as a means of delivering specific antigens to the immune system and stimulating the production of a high avidity, high frequency T cell response.

Scancell's approach is to develop DNA constructs – "Immunobodies" – that code for engineered human IgG1 antibody molecules. IgG1 is the most abundant immunoglobulin present in humans. Introduced into the sequence, at a number of points is the coding for specific CD8+ CTL epitopes and also CD4+ T helper cell epitopes which are derived from specific tumour target antigens (illustrated below). The nature of the construct is a key differential feature of Scancell's technology. By utilizing human IgG1 as a scaffold, this should minimise non-specific immune responses and by including both CD8+ and CD4+ epitopes targeted to the same or a very similar tumour, they believe this will provide success in generating high avidity responses. This has been borne out in the laboratory where a number of Immunobody DNA vectors, have been produced, incorporating a wide range of sequences from a number of different CTL and helper T cell epitopes. Laboratory studies have confirmed that the expressed antigens are efficiently processed and presented.[1]

Other groups have been working with DNA vaccines incorporating both CD8+ and CD4+ epitopes but often the CD4+ targets have been different tumour antigens or even non-tumour adjuvant antigens which, although stimulating an immune response, has not translated into real clinical efficacy, possibly due to lower avidity.

[1] *Metheringham et al*, mABs 2009, 1, 71-85

Scancell's ImmunoBody® technology



Source: Scancell

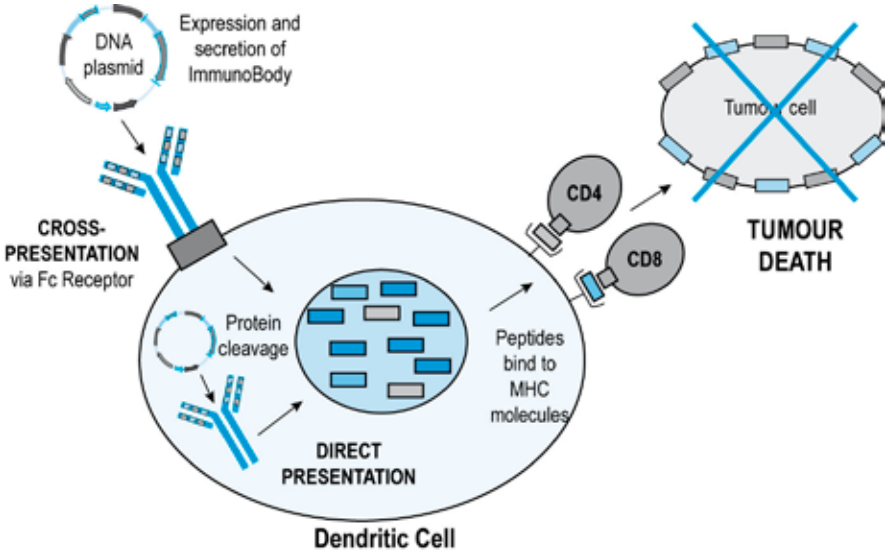
Following injection of the ImmunoBody®, the DNA vector is taken up by antigen presenting cells. They decode the DNA and express the engineered antibody. The peptide antigens are presented on specific protein molecules (major histocompatibility complex, MHC) on the cell surface (either MHC class I or MHC class II) where they can react with the T cell receptor of CD8+ or CD4+ cells respectively. T cells which recognize these complexes are then activated, either as direct effectors (CD8+ CTLs) which should seek out and destroy the tumour cells or as amplifiers of the response (CD4+ helper cells). This process is known as direct presentation of the vaccine antigen.

Some of the antigen expressed after uptake of the DNA vector is secreted as an antibody containing both the CD8+ and CD4+ T cell epitopes. This secreted antibody can then be bound and internalised by other dendritic cells which go on to present the epitopes to CD8+ and CD4+ T cells – a process known as cross-presentation. Cross-presentation is believed to be important in the immune defence against viruses, bacteria and proteins.[2]

Scancell have demonstrated that the combination of the two mechanisms of direct and cross-presentation through their ImmunoBody® technology is important for the generation of high avidity responses – a "double whammy". They believe that ensuring the production of high avidity responses will enhance their chances of success in developing effective therapeutic agents.

[2] *Heath WR, Carbone FR. 2001.* Nat Rev Immunol 1: 126-34; *Melief CJ. 2003.* Eur J Immunol 33: 2645-54

Proposed mechanism of action of ImmunoBody® technology



Source: Scancell

SCIB1

Scancell's lead project, SCIB1 is directed against melanoma utilising a DNA vaccine construct that encodes a CTL epitope derived from the Tyrosinase Related Peptide 2 (TRP-2) antigen. TRP-2 is an enzyme involved in melanin biosynthesis which is markedly over-expressed in many malignant melanomas[3]. Two different T cell helper epitopes derived from gp100 (DR4 and DR7) have also been inserted into the sequence. gp100 is a non-mutated, differentiation antigen expressed on melanocytes and over-expressed on melanomas.

As stated before, there may be a number of tumour specific or tumour associated antigens present on cancer cells. Many such antigens have now been identified on a whole range of tumours. Therapeutic cancer vaccines are being investigated in at least 18 different tumour types with the greatest attention to date being focused on melanoma.

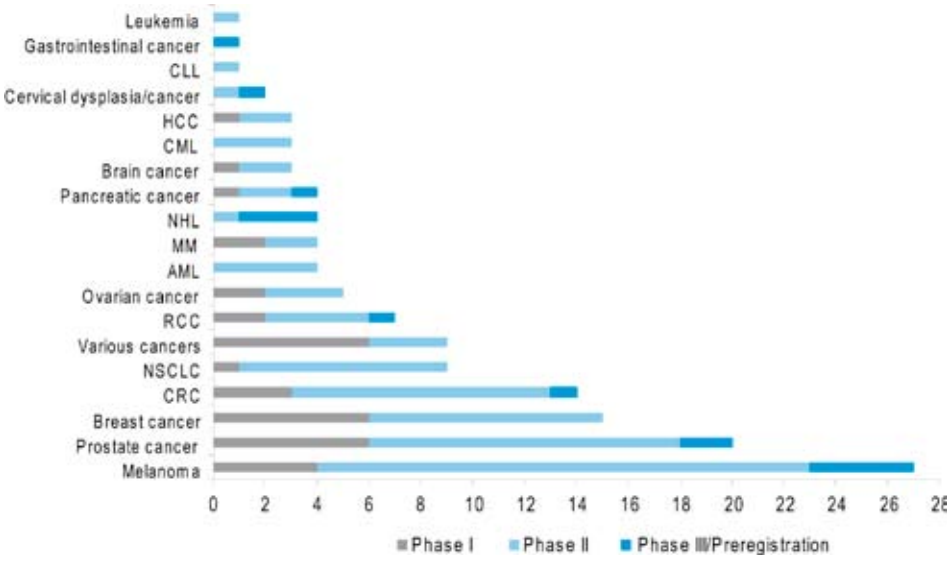
SCIB1 market and revenue projections

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Worldwide incidence of melanoma (# patients in 000s)	149	153	158	163	168	173	178	183	189	194	200	206	212
Addressable market (25%) in 000s	37	38	40	41	42	43	44	46	47	49	50	52	53
Yearly cost of anticipated therapy (US$)	25,000	25,500	26,010	26,530	27,061	27,602	28,154	28,717	29,291	29,877	30,475	31,084	31,706
Estimated WW market size (in US$m)	$931	$978	$1,028	$1,080	$1,135	$1,192	$1,252	$1,316	$1,382	$1,452	$1,526	$1,603	$1,684
Our SCIB1 revenue estimate													
Core view													
Estimated market penetration											10.0%	20.0%	25.0%
Estimated sales (in US$m)											**$153**	**$321**	**$421**
Optimistic view													
Estimated market penetration											15.0%	30.0%	40.0%
Estimated sales (in US$m)					**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$229**	**$481**	**$674**

Source: Objective Capital estimates, cancer population estimates from World Health Organization

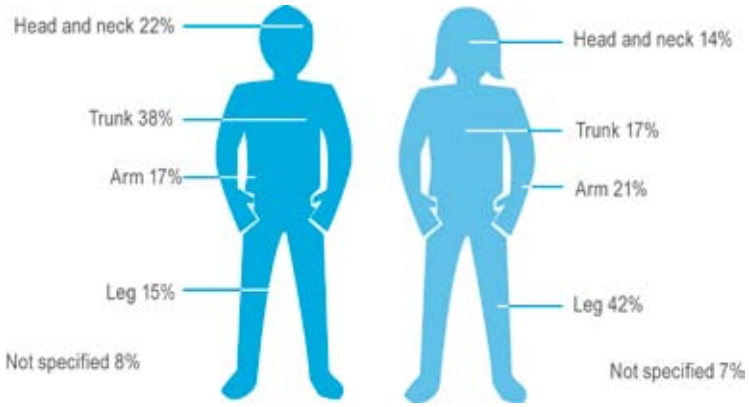
[3] *Chu et al*, Oncogene 2000, 19, 395-402

Therapeutic cancer vaccines pipeline Dec 2006



Source: Datamonitor Pipeline Insight

Sites of melanoma occurrence in UK



Source: CRUK skin cancer facts

Malignant melanoma

Malignant melanoma is the most serious type of skin cancer. It usually develops in cells in the outer layer of the skin. The first visible signs of this may be a change in the normal look or feel of a mole.

More than 10,400 cases are diagnosed in the UK every year and the incidence of melanoma has gone up by more than four times since the 1970s. Rates of melanoma have risen faster than for any other cancer in the UK.

Over 2,600 people die from skin cancer each year in the UK, and most of these cases are due to malignant melanoma. In fact, there are more skin cancer deaths in the UK than in Australia, even though Australia has more cases of the disease.

On a global scale, WHO estimates that around 132,000 new cases are diagnosed per year. The overall incidence has risen around 3% per year from 1992 to 2004 in the United States [4].

[4] *Medical News*, Jan 2009

Success in animal models

The TRP-2 CD8+ epitope, which is associated with melanocytes (pigmented cells), is recognised in pigmented mouse strains such as C57BL/6. Scancell has therefore run studies in this strain of animals to investigate the effects of immunisation. Since the helper sequence, gp100 DR7 is not recognised by C57BL/6, measurement of the response to this antigen can be used as a negative internal control within the experiment.

Three intradermal doses resulted in induction of high frequency TRP-2 specific responses which were shown to be of high avidity.

Similar studies were run in other mice which were able to recognise the helper CD4+ epitopes. Following a similar immunisation programme, high frequency, high avidity responses were again obtained.

Successful immune responses in themselves are not necessarily indicative of an anti-tumour response.

Accordingly, mice were administered three doses of SCIB1 over a two week period, prior to being inoculated with B16 melanoma cells on the final day of the immunisation. As in the other animal studies, high frequency, high avidity CTL and helper T cell responses were obtained. In addition, in these animals, tumour growth was delayed by between 10 and 15 days with survival enhanced in the dosed animals compared to the controls.

Further studies have shown that the effects on tumour growth can be markedly enhanced through depletion of CD25 which is known to suppress immune response and passage of killer T cells into tumours.

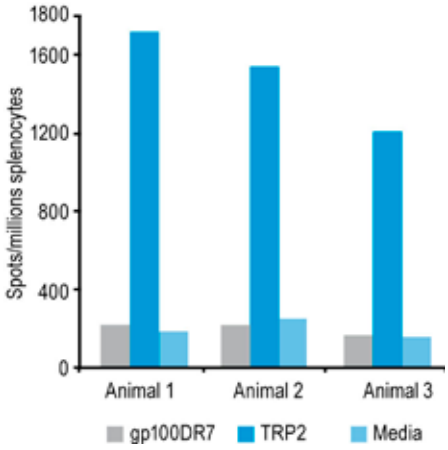
Importantly, immunized mice demonstrated a persistence of immune memory so that subsequent booster injections resulted in reactivation of high frequency, high avidity responses. This means that the immune system would rapidly react to the subsequent presence of the antigens. Such a memory effect, if mirrored in humans, might have potential to eliminate metastatic lesions.

Some animals in the studies, particularly those that responded well to vaccination, demonstrated vitiligo. Vitiligo is a fairly common condition where the skin turns white in patches. It is due to the loss of melanocytes and its occurrence in this case is thought to be attributable to the activity of the T cells stimulated by the SCIB1. Apart from an increased sensitivity to UV light and a need to protect the skin against sunburn, vitiligo itself has no clinical symptoms but nevertheless it can have significant psychological implications – one well-know sufferer was Michael Jackson.

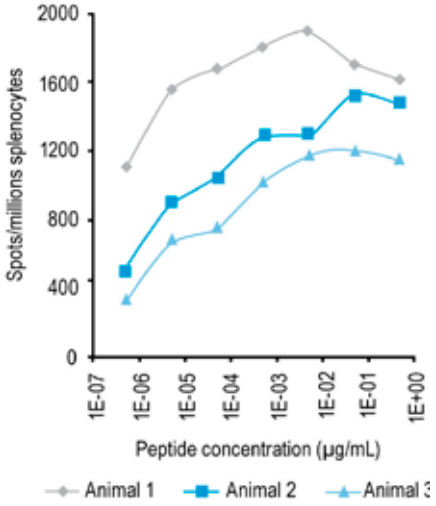
This will be a point to consider with regard to clinical trials and whether or not this side effect is observed in humans. If SCIB1 is successful against late stage melanoma where currently there are few successful therapies, some degree of vitiligo may well be a tolerable side effect. If however the drug is targeted at early stage patients with SCIB1 administered as an adjuvant to surgery to prevent recurrence or metastases, then the acceptability of significant vitiligo may well be rather lower.

Induction of high frequency and high avidity T cell responses

Induction of TRP-2 specific T cell responses following immunisation with SCIB1 DNA.



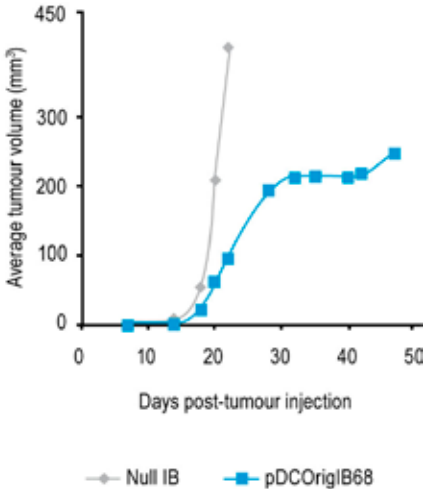
Induction of high avidity T cell responses following immunisation with SCIB1 DNA.



Source: Scancell

Reduction in tumour volume following immunisation*

* test using a murine B16 melanoma tumour model in HLA-DR4 transgenic mice



Source: Scancell

Get the drug to the right site

Clearly to be effective, a drug has to be delivered to the appropriate site in the body. Very few biological based drugs can be administered orally so they have to be given via injection either into the blood stream, under the skin, into the muscle or peritoneal cavity.

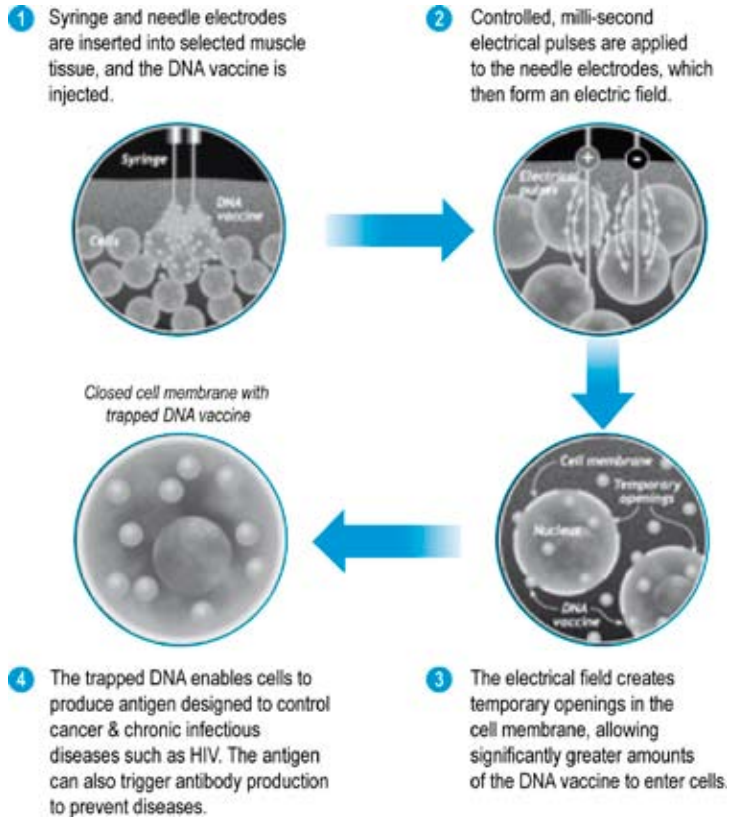
One such process is electroporation where drug penetration of the skin is enhanced through application of a short electrical pulse to the skin.

Delivery of DNA vaccines by electroporation has been shown to greatly increase the potency of DNA vaccines with enhanced gene expression and immune response when compared to DNA delivery without enhancement.

Scancell are collaborating with Ichor, who are one of the leading companies in the electroporation drug delivery field and have signed an agreement to use Ichor's TriGrid™ electroporation device for the delivery of SCIB1.

Although electroporation has been confirmed as an effective means of delivery of DNA vaccines, it is not the only method available. Scancell is exploring other technologies, including the liposomal based DepoVax™ system, signing a deal with ImmunoVaccine Technologies in early August, 2009.

How electroporation delivers DNA vaccines



Source: Inovio

The next steps for Scancell

Having demonstrated efficacy in mouse, the next step is to demonstrate proof of concept in the real target species – humans.

Scancell are proceeding with this next stage of development. Material of appropriate (GMP) quality has been synthesised and regulatory toxicology is presently underway. Submission to the regulatory authorities for permission to begin human trials is planned for early 2010. Assuming success in further fund-raising, first human dosing could begin early 2Q 2010.

This study will be a Phase I/II design of 5 doses over a six month period. A rising dose schedule will be employed to look at the safety of individual dose levels before proceeding to a higher dose. The initial patients, Phase I, will have advanced disease which will permit a measure of safety to be assessed but as these subjects may have compromised or weakened immune systems, it may be challenging, at least in this first phase of the trial, to properly assess the immune response. This first part of the trial will be expected to take around one year to complete and cost around £0.5 million. Phase II, where immune response data should be anticipated will probably take a further year to complete at an additional cost of around £0.5 million. Some interim data may be available throughout the trial as patients will be monitored on an ongoing basis.

Positive trial data would demonstrate the ability of SCIB1 to generate a high avidity CD8+ CTL and helper CD4+ T cells response in humans with melanoma. As such, it should represent proof of concept of the individual agent, SCIB1 as an active immunostimulant; it will also provide some confirmation of the potential of the overall ImmunoBody® approach. Due to the small numbers of patients involved at this stage of development, it is not expected that clinical efficacy will be demonstrable.

Nevertheless, Scancell hope, at this point, to have generated sufficient data to enable them to partner the SCIB1 project with a larger Pharmaceutical or Biotech company who will assume the responsibility for conducting the additional, larger clinical studies necessary to demonstrate that such an immune response does translate into a clinical benefit, obtain registration and commercialise the product.

And after SCIB1

Clearly, by changing the expressed epitopes, there is potential to utilise the ImmunoBody® technology as a platform to target a number of antigens and thereby develop a range of therapeutic agents. Such agents could have utility against other cancers and also chronic infectious diseases including hepatitis and HIV.

Scancell are working on their next project, SCIB2 which is also in the cancer field and is targeting angiogenesis – the process by which the production of new blood vessels are stimulated. An agent that disrupts angiogenesis would prevent the formulation of new blood vessels necessary for the growth of a tumour and could have utility against a range of solid tumours. There are a number of potential

angiogenic factors that could be targeted including fibroblast growth factor (FGF), vascular endothelial growth factor (VEGF), platelet derived growth factor (PDGF), angiopoetins (Ang 1, 2, 3 and 4), VE-cadherin and plasminogens.

Through this work, which currently involves screening a wide range of possible epitopes, Scancell are also building a significant knowledge base around the science with the potential for further patent property and protection. Not every epitope incorporated into an ImmunoBody® has proven to be an effective immunogen. Understanding this is a significant addition to Scancell's scientific capabilities and proprietary knowledge base.

There is also the potential for Scancell to collaborate with other companies utilising the ImmunoBody® technology to develop DNA vaccines for their proprietary targets. One area that Scancell have indicated that they would wish to partner is that of infection where they already have a collaboration with ImmunoBiology who have licensed the ImmunoBody® technology to develop vaccines against influenza and hepatitis.

Intellectual Property

IP ownership and freedom to operate are key aspects of success in the Biotech sector. Scancell is keenly aware of this and is developing its patent portfolio by ensuring that wherever possible, patents are filed to protect their research discoveries and enhance value. The key aspect of Scancell's ImmunoBody® technology is the construction of a vector which codes for the Fc binding domain of the high affinity CD64 receptor. They also have property covering the use of a DNA vector expressing T cell epitopes within an inert carrier that targets activated dendritic cells.

Discussions are ongoing with NIH with regard to a non-exclusive licence to the TRP-2 epitope for use in SCIB1. Beyond that, at present, Scancell are not aware of any conflicting IP claims or patents which might restrict their freedom to operate in this field. As there is a lot of current interest and activity in the field of DNA vaccines, the area needs to be constantly monitored for the potential appearance of interfering or overlapping IP.

Competition

The wealth of immunologically based therapies ranging from antibodies through to vaccines of various types being investigated as possible cancer treatments demonstrates the scientific belief that there is significant merit in the overall approach. Antibody therapy is well proven with a number of very successful drugs already on the market.

DNA vaccines are at a much earlier stage although a number are in advanced clinical trials.

One of the most advanced is amolimogene (Eisai) which targets Human Papilloma virus and is in PII/III trials for cervical dysplasia.

In melanoma, Cytos CYT-004-MelQbG10 which targets the Melan-A/MART-1 cancer antigen is currently in PII. Oxford Biomedica have completed a PIIa study with Hi-8 MEL which they obtained through their acquisition of Oxxon Therapeutics in 2007. Mannkind has a clinical trial ongoing, testing MKC1106-PP which targets two tumour-specific antigens, preferential antigen of melanoma (PRAME) and prostate specific membrane antigen (PSMA) in a range of tumour types including melanoma. None of these products are directly targeting the TRP-2 antigen and the underlying technologies in each case are somewhat different to the ImmunoBody® approach.

An academic study, sponsored by NCI, in metastatic melanoma patients treated with tyrosinase-related protein-2 180-188 peptide vaccine with and without IL-2 has recently been completed, but results are not yet published. Additional NCI clinical studies of DNA vaccine presentations are currently underway investigating various other melanoma antigens and adjuvants.

Apart from this, Scancell are not aware of any direct competition in the field at present.

There is a lot of indirect contemporary competition in the melanoma field with around 90 compounds in Phase II or later development at the end of 2008.[5] These compounds encompass the whole range of pharmaceutical entities from vaccines and other biological therapeutics such as antibodies and proteins to small molecule cytotoxics. This high degree of activity is undoubtedly attributable to the fact that at present there are few treatment options available for melanoma patients once their disease has metastasised. Interferon alpha is used for patients free of disease but in whom there is a high risk of recurrence. Late stage, metastatic patients receive either dacarbazine or temozolamide, both cytotoxics with significant side effect profiles and offer no improvement in survival.

Market potential

The first potential market for a Scancell derived product would be melanoma – the target for SCIB1. The product is many years away from being commercialised and Scancell have indicated that they will be seeking a partner following initial clinical trials. They have no intentions on their own part to conduct late stage clinical trials or seek to commercialise a product. For a partner with SCIB1, as a prospective commercial opportunity, melanoma could have significant potential although as the vaccine is not yet in the clinic, it is challenging to speculate just what the value might be.

Melanoma is a disease primarily occurring in the developed areas of the world such as Europe, North America and Australia with incidence continuing to rise. These territories are traditionally associated with higher priced medicines.

It is likely that the primary target patient population would be later stage patients, probably stages 2b, 3 or 4 in whom the disease was either local and advanced or had metastasised to distant sites. National Cancer Institute figures indicate that this group represents around 15% of melanomas at first diagnosis. Here, the target for success would be to prevent disease progression and extend survival.

[5] Source: Datamonitor

If SCIB1 was shown to be effective and safe in the primary population, there could be potential to extend its use to earlier stage patients as an adjunct to surgery in order to prevent recurrence and eliminate metastatic lesions. This would open up the possibility of a much wider target population group – possibly up to 50% of the diagnosed population. In this instance treatment would be aimed at preventing any recurrence of disease. It would be essential however for success in this group that the side effect profile is minimal. It is envisaged that treatment might be accomplished by an initial course of induction doses over a short period of time, possibly three doses over four weeks of induction doses. This would then be followed by booster injections in order to ensure a cohort of memory T cells remain active. Until clinical data on immune responses are available, it is not clear at the present over what time frame boosters would be necessary, e.g., annually for five years or whether, in fact, recurrence or metastases would be sufficient to promote the memory response and result in a re-stimulation of the immune system and elimination of the tumour cells.

The current market in melanoma is limited and difficult to value accurately due to the fact that dacarbazine is generic, Temodar is only being used off-label and both of these drugs and interferon are used to treat a range of conditions.

Expected value of SCIB1 (pre-corporate tax)

Summary of valuation (pre corp tax)

Scenario ($m)	Core	Alternative
EV of royalties*	**62.9**	**128.2**
Likelihood of success (PoS)	*7%*	*7%*
EMV of royalties	**4.2**	**8.6**
Add: EMV of upfront payments	1.4	2.2
Add: EMV of milestone payments	3.7	5.1
less: EMV of development costs	0.5	0.5
EMV of SCIB1	**8.7**	**15.3**
per share		
- US$ ps	0.98	1.71
- £ ps	0.61	1.06

Key market & licence assumptions

Indication/ Market	Route to Market	Royalty Rate*/ Effective Margin	Approx Date	Impact of Generics Price Impact
Global	Licenced	*7%*	2028	*-25%*

* royalties shown are shown net of assumed third party royalties

Sensitivity to change in ...

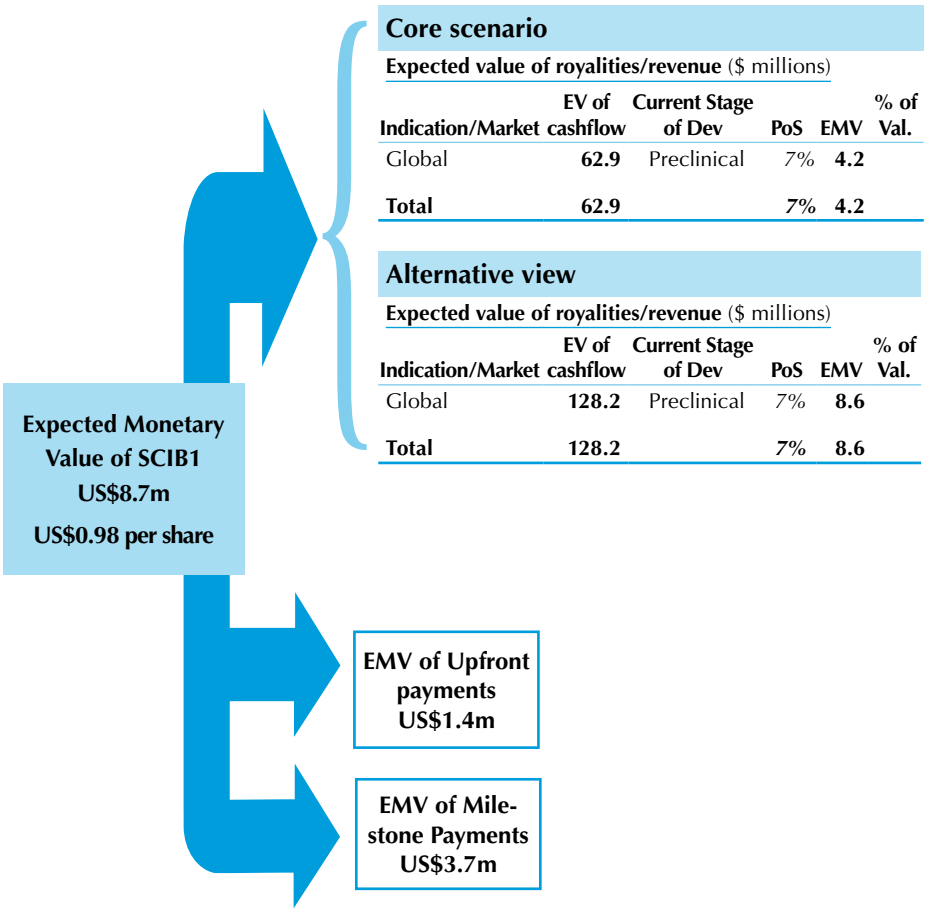
Impact of generics (+ % price decline)

	-20.0%	-10.0%	+0.0%	+10.0%	+20.0%
Value ($m)	9.1	8.9	8.7	8.6	8.4
Change in Value	*4%*	*2%*	*0%*	*-2%*	*-4%*

Increase in royalty/margin (+%)

	-10%	-5%	0%	5%	10%
Value ($m)	4.5	5.7	8.7	11.8	14.8
Change in Value	*-48%*	*-34%*	*0%*	*34%*	*69%*

Components of core valuation (pre-corp tax)



Core scenario

Expected value of royalities/revenue ($ millions)

Indication/Market	EV of cashflow	Current Stage of Dev	PoS	EMV	% of Val.
Global	**62.9**	Preclinical	*7%*	**4.2**	
Total	**62.9**		***7%***	**4.2**	

Alternative view

Expected value of royalities/revenue ($ millions)

Indication/Market	EV of cashflow	Current Stage of Dev	PoS	EMV	% of Val.
Global	**128.2**	Preclinical	*7%*	**8.6**	
Total	**128.2**		***7%***	**8.6**	

Partnering potential

Scancell's ImmunoBody® technology has the potential to act as a platform for the development of a range of therapeutics. As such, there are a number of possible partnering opportunities for the company:

- partnering to develop ImmunoBodies® to partner's proprietary targets;
- license access to individual SCIBs;
- acquisition of the entire company.

Scancell is in discussions with a number of companies to raise awareness of their technology and to provide updates on progress of SCIB1 which they believe will provide validation of the platform. Deals are possible at any time, but clearly, what is required is a package of information to provide the partner with a degree of reassurance that the technology will deliver.

In parallel with the SCIB1 clinical trial, they will seek to establish access to other companies' proprietary targets with a view to developing active, high avidity immunogens which can be licensed back to the originators.

They also intend to seek licensees for their own in-house ImmunoBody® products on an individual basis.

Scancell anticipate being in a position to partner the lead project SCIB1 once the clinical trial data becomes available, sometime during 2012. The intent is to stimulate interest as the trial proceeds as the immunology data will be analysed on an ongoing basis. This partnership could involve a licence agreement or an acquisition of the whole company, the latter being Scancell's current preferred option.

Clearly, the results of this trial are the primary driver of Scancell's future.

There are a limited number of benchmarking deals where financial terms have been released:

- In March 2007, Oxford Biomedica initiated the acquisition of Oxxon Therapeutics for £15.9 million. Oxxon's lead compound, a melanoma vaccine comprising plasmid DNA plus a modified virus vector expressing a number of CTL epitopes derived from melanoma antigens had completed Phase II clinical trials.

- In November, 2007, Dynavax licensed the HBV vaccine Heplisav to Merck. Heplisav which consists of the HBV surface antigen together with immunostimulatory DNA sequences was in Phase III at the time. An upfront fee of US$31.5 million was paid with potential further milestones of US$105 million and royalties. A year later however, at the end of 2008, Merck returned all rights to Dynavax.

- In August, 2008, Cytos announced a collaboration with Pfizer, granting Pfizer world-wide exclusive rights to commercialize certain vaccines based on Cytos Biotechnology's Immunodrug™ technology. In return, Cytos received an upfront payment of CHF 10 million from Pfizer and is eligible for up to CHF 140 million in pre-commercial milestone payments and manufacturing technology transfer fees.

- In May, 2009, GlobeImmune and Celgene announced a worldwide strategic collaboration focused on the discovery, development and commercialization of multiple product candidates based on targeted molecular immunotherapy for the treatment of cancer. Under the terms of the agreement, GlobeImmune will receive a US$40 million upfront payment from Celgene, which includes an equity investment in GlobeImmune together with additional development milestones of over US$500 million plus royalties on sales. In return, GlobeImmune is granting Celgene an exclusive option to all oncology programmes, including GI-4000, a Tarmogen technology-based product currently in Phase II pancreatic cancer studies as well as all of GlobeImmune's other oncology product candidates on a programme by programme basis.

Recent Cancer Deals – June 08 to May 09

Companies	Clinical Phase	Disease	API	Mechanism of action	Upfront fees	Potential total	Notes	Deal date
ThromboGenics/BioInvent Roche	Phase I	Oncology	TB-403	Monoclonal inhibitor of angioenic Placental Growth Factor	€50 mi	€450 mi	TG and BI retain co-promotion rights for the product in the Benelux, Baltic and Nordic regions	June 08
ImmunoMedics Nycomed	Phase I	All non-cancer	Veltuzumab	Anti-CD20	$40 mi	$580	ImmunoMedics retain rights for oncology	July 08
Sonus Pharmaceuticals Bayer	Pre-clin	Oncology	Various	Small molecule caspase activators	$450K	ND	Activating caspase to trigger apoptosis in tumour cells	Aug 08
Lpath Merck Serono	Phase I	Oncology	ASONEP	Mab S1P inhibitor.	$23 mi	$422 mi	S1P is a bioactive lipid involved in tumour cell migration and angiogensis	Oct 08
ArQule Daiichi-Sankyo	Phase I Pre-clin	Oncology Oncology	ARQ-197 Various	c-Met inhibitor selective kinase inhibitor platform	$75 mi	ND	Combined deal for small molecule c-Met (tyrosine kinase) inhibitor and kinase inhibitor discovery platform	Nov 08
Diatos Drais Pharmaceuticals	Phase I	Advanced and metastatic solid tumours	DTS-108	Active is a topoisomerase 1 inhibitor		€46.9 + royalties	Tumour selective pro-drug	Dec 08
Alnylam Tekmira	Phase I	Liver cancer	ALN-VSP	Kinesin Spindle Protein (KSP) and Vascular Endothelial Growth Factor (VEGF) inhibition	$16 mi +	ND	2 siRNAs in a lipid based formulation Additional $11.2 mi over 3 years for process development and manufacturing	Jan 09
S*Bio Onyx	Phase I Phase II Prec-clin	Leukaemia Lymphoma Cancer	SB1518 SB1578	Janus Kinase 2 (JAK2) inhibitors	$25 mi	ND	Options that can be converted to exclusive licences	Jan 09
Ardea Bayer	Phase I	Bowel cancer IBD	RDEA119	Mitogen-activated ERK kinase inhibitor	$35 mi	$407 mi	Single agent or in combination with sorafenib	Apr 09
GlobeImmune Celgene	Phase II	Pancreatic cancer	GI-4000 (+ others)	Tarmogen based immunotherapy	$40 mi	$500 mi	Tarmogen – heat inactivated recombinant S cerivisiae	May 09

Financials

Profit & Loss

Year ending April (£000's)	2008A	2009A	2010E	2011E	2012E
Revenues					
Upfront payments	0	0	0	0	0
Milestone payments	0	0	0	0	0
Licensing/royalty revenues	0	0	0	0	0
Net revenues	0	0	0	0	0
Development costs	241	713	110	621	633
Gross profits	(241)	(713)	(110)	(621)	(633)
Administrative expenses	269	402	422	422	422
Other income	0	213	0	0	0
Depreciation	27	28	27	27	26
Profit from operations	(510)	(902)	(559)	(1,069)	(1,081)
Interest income	61	57	81	92	58
Pretax income	(449)	(845)	(478)	(977)	(1,023)
Tax	0	0	0	0	0
Tax credit	(44)	(185)	(50)	(50)	(50)
Net tax	(44)	(185)	(50)	(50)	(50)
Net income	(406)	(660)	(428)	(927)	(973)
EPS (p)	(5.6)	(7.4)	(3.2)	(6.9)	(7.3)

Balance Sheet

Year ending April (£000's)	2008A	2009A	2010E	2011E	2012E
Non-current assets					
Property plant & equipment	87	82	80	79	77
Total	87	82	80	79	77
Current assets					
Debtors	51	405	250	250	250
Cash & equivalents	998	1,519	3,048	2,122	1,151
Total	1,049	1,924	3,298	2,372	1,401
Total assets	1,136	2,006	3,378	2,451	1,478
Current liabilities					
Creditors	88	167	167	167	167
Total	88	167	167	167	167
Net assets	1,047	1,839	3,212	2,284	1,311
Shareholder's equity					
Total equity	1,047	1,839	3,212	2,284	1,311

Cashflow

Year ending April (£000's)	2008A	2009A	2010E	2011E	2012E
Operating profit (loss)	(510)	(902)	(559)	(1,069)	(1,081)
Depreciation charges	27	28	27	27	26
Government grants	0	-213	0	0	0
Decrease/(Increase) in debtors	12	-207	155	0	0
Increase in creditors	31	78	0	0	0
Net cash from operations	(440)	(1,216)	(377)	(1,043)	(1,055)
Cashflow from investing					
Property plant & equipment purchases	(1)	(23)	(25)	(25)	(25)
Taxation	(149)	39	50	50	50
Returns on investments and servicing of finance	61	57	81	92	58
Net cash from investing activities	(89)	73	106	117	83
Cashflow from financing activities					
Net issue of ordinary shares	21	1,665	1,800	0	0
Net cash from financing	21	1,665	1,800	0	0
Net increase (decrease) in cashflow	(507)	521	1,529	(926)	(972)
Opening cash equivalents	1,505	998	1,519	3,048	2,122
Closing cash equivalents	998	1,519	3,048	2,122	1,151

Source: Objective Capital

Appendix: Management

David Evans (Non-Executive Chairman)
As the former CFO David Evans guided Shield Diagnostics Ltd. through its IPO and then, as its CEO, through its merger with Axis Biochemical ASA to form Axis-Shield plc, a fully listed diagnostics company. In addition to being Chairman of the Company he is currently non-executive Chairman of Epistem, Immunodiagnostic Systems Holdings plc and Omega Diagnostics Group plc, all of which are AIM listed biotechnology companies.

Professor Lindy Durrant (CEO)
An internationally recognised immunologist in the field of tumour therapy, Prof. Durrant has worked for 21 years in translational research, developing products for clinical trials including monoclonal antibodies for diagnostic imaging and therapy and cancer vaccines. She has a personal Chair in Cancer Immunotherapy at the Department of Clinical Oncology at the University of Nottingham and is currently running clinical trials in colorectal cancer and osteosarcoma.

Dr Richard Goodfellow (Commercial Director)
Dr Richard Goodfellow has over 25 years international experience in the pharmaceutical industry, in Big Pharma and with Biotech companies. During his time at Astra, he oversaw the launch of Losec and other key products internationally. Thereafter, he held the post of Director of Licensing and New Business Development at Scotia Pharmaceuticals, where he was involved with the company's flotation on the London Stock Exchange and successfully negotiated numerous deals. Dr Goodfellow is also a founder of Paradigm Therapeutics, a Cambridge based functional genomics company and is a former Director of Enact Pharma plc.

Nigel Evans (Company Secretary)
Nigel Evans has 40 years commercial and strategic responsibilities at senior levels in Rolls-Royce plc in the UK and overseas. Now an active investor in public and private companies, he oversees Scancell's corporate and financial activities. He was Executive Chairman of Scancell for seven years, until 2007, and was heavily involved with its progress during that period.

Michael Rippon
Mike Rippon has over 40 years experience in the motor industry. He is now an active investor in small private companies and is one of Scancell's major private investors. He was appointed to the Board on 1 January 2004 as the Shareholder Representative.

Dr Matthew Frohn
Dr Matthew Frohn graduated from Oxford Brookes University with a degree in Cell and Molecular Biology followed by a D.Phil in Biochemistry from Oxford University. He worked on research collaborations with Astra Zeneca, and a short research post with a British Biotech subsidiary before joining Oxford Technology Management in 1999, the manager of the Oxford Technology VCTs.

We are pleased to bring you this report on **Scancell.**

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As always, I welcome your comments and feedback on our research!

Gabriel Didham, CFA
Objective Capital

Scott Davidson, CFA
Scott has worked in the equity research industry for over ten years, focusing on the life sciences arena for the past eight years. He has previously work for Allen & Company, FAC Equities in New York. Scott is a graduate from Harvard University.

Dr Alan Warrander
Alan has over 25 years wide-ranging experience in the Pharmaceutical Industry providing advice and expert scientific opinion on Partnering, Strategic Planning and Drug Development. Alan was previously Senior Vice President, Life Sciences at Wood Mackenzie, the global consultancy firm. Prior to this he was a Director of Global Licensing with AstraZeneca and previously led a Drug Metabolism/Pharmacokinetics Unit at ICI/ Zeneca Pharmaceuticals.

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Objective Capital Research Limited
Tel: +44-(0)870-080-2965
Fax: +44-(0)203-137-0076
sales@objectivecapital.com

Internationally:
Phone: +44-20-7754 5994

US Toll-Free:
1-888-802-7215

For Marketing & Sales:
Token House
11-12 Tokenhouse Yard
London EC2R 7AS

Corporate: www.ObjectiveCapital.com
Research: www.ObjectiveCapital.co.uk