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In this edition...
Although uncertainy and fear pervade equity markets, the biotech sector continues to offer impressive value. The value comes not only from companies advancing products through exploratory and pivotal studies in humans such as Arana Therapeutics and Pharmaxis, but also from companies such as Cellestis which is beginning to grow revenues from sales of its diagnostic test for latent tuberculosis.
Finally some certainty has come the way of Sirtex Medical with a long-running courtcase instigated by the University of Western Australia being resolved in Sirtex's favour. However, what one significant shareholder will do with his Sirtex stock is a matter for investors to be aware of.

The editors
Companies covered: AAH, CST, PXS, SRX

	Bioshares Portfolio
Year 1 (May '01 - May '02)	21.2%
Year 2 (May '02 - May '03)	-9.4%
Year 3 (May '03 - May '04)	70.0%
Year 4 (May '04 - May '05)	-16.3%
Year 5 (May '05 - May '06)	77.8%
Year 6 (May '06 - May '07)	17.3%
Year 7 (from 4 May '07)	-36%
Cumulative Gain	**108.0%**
Av Annual Gain (6 yrs)	**26.8%**

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Bioshares

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Delivering independent investment research to investors on Australian biotech, pharma and healthcare companies.

Profitable Cellestis Now One to Watch

Cellestis (CST: $2.27) has emerged as company worth monitoring and considering as revenues from the sales of its blood-based diagnostic for latent tuberculosis starting to build credibility. In the first half of this financial year, the company delivered its maiden profit result, generating a net profit of $328,000 for the first six months of this year from sales of $7.9 million over the six month period. The company's latest cashflow statement for the first three months of this year showed that receipts from customers jumped by 93% to $4.9 million, delivering a net positive operating cashflow of $1.0 million.

Cellestis is capitalised at $218 million with $13 million in cash at the end of last month. With Cellestis having almost doubled its receipts from customers over the previous corresponding period, the stock is beginning to look attractive.

Sales strategy

Cellestis sells its diagnostic test through a combination of distributors and its own sales and marketing teams. The company is seeking to replace the 100 year old tuberculin skin test (TST). The company sells direct into Australia, the US and parts of Europe (UK, France, Germany, Switzerland, Australia and Poland) and sells via distributors in other European countries such as Spain, Portugal, Italy, Turkey, Scandinavia and Eastern Europe, and in Canada, Japan, India, Korea Singapore and Taiwan.

It is a long and hard road to change the practice of healthcare practitioners and convince them to adopt a novel technology in preference to a testing procedure that has been in place for over 100 years. However, with 167 scientific papers under its belt, the Cellestis Quantiferon TB Gold In Tube test is well on its way to becoming an accepted test for the detection of latent TB infection.

The largest market for the company's TB test is in the hospital system for heathcare workers, and to public health bodies that use the test to screen at risk groups. A smaller market for Cellestis is for use in prisons, where new inmates are screened for TB with regular annual screening programs common. The military is also a target market for the company, but once again smaller than the healthcare industry. The company is currently selling into all of these markets.

Healthcare workers in hospitals have an 8-10 times greater chance of contracting TB infection and undergo regular testing for TB infection. Once diagnosed with latent infection, regular assessment to check for active TB infection is recommended (with an x-ray

Cont'd over

procedure). Active TB infection is treated with antibiotics which needs to be taken for between six to 12 months because of the slow growing tuberculosis bacteria, although requires an abstinence of alcohol over this period.

Cellestis has shown that not only its test is more accurate than the skin test in detecting latent infection, but is six times more predictive in determining whether people with latent TB will progress to an active infection.

The driver for better TB control is the emergence of drug resistant TB. Strains of TB are emerging that are Multi-Drug Resistant (MDR) which is causing a serious health issue. MDR TB infection is generally treatable, however the treatment involves takes up to two years and costs 100 times than treating non-drug resistant TB strains. What is more dangerous is the emergence of Extremely Drug Resistant (XDR) TB strains, which has a 20%-40% mortality rate even when the best treatment options are employed.

The Cellestis TB test sells for around US$20 in the US and around 20 Euros in Europe. There are approximately 500 centres globally that are now set up to accommodate and purchase the Cellestis TB test.

The newer Quantiferon In-Tube test allows more straightforward processing of the test, whereby a sample can be collected in remote areas directly into the Quantiferon tube and then incubated within 16 hours for between 10-24 hours. From there healthcare workers have three days to deliver the sample to a pathology laboratory (at room temperature) where the final Elisa-based processing takes place following separation of the plasma through a centrifuge.

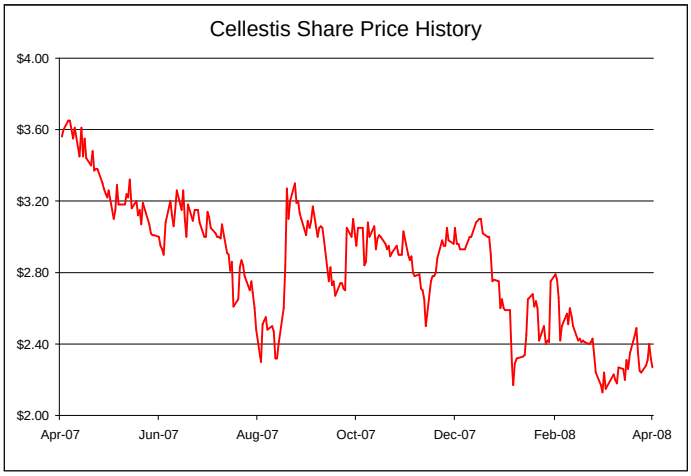
That the Quantiferon TB test is more accurate in picking up latent TB infection and more predictive as to whether active infection will occur, it poivides important function in controlling the spread of TB, MDR TB and XDR TB. That drug resistant strains are increasing and becoming a serious health threat suggests the demand for the Cellestis may accelerate.

Market for TB tests

In the US, there are 18 million TB tests carried out annually. Assuming the US accounts for 40% of the global market and the test sells for US$20, it represents a potential market – at current usage rates – of $900 million. Cellestis currently has a penetration rate of around 2%-3%. There is potential for enduring strong growth for the company. Once a critical point of test adoption is reached, the company has the potential to gain a majority of the latent TB diagnostic market.

However it should be noted that factors that will inhibit the switch to Quantiferon is the need to take a blood test over 100 year old skin test and the inertia that needs to be overcome to switch current practice, the latter which is well on the way.

There is also the real possibility that for an increase in TB surveillance with the emergence of the dangerous drug resistant strains of TB.



Staff

Cellestis employs between 40-45 staff with an additional five staff expected to be added shortly to assist with marketing the test. The company is determined to maintain its profitability moving forward.

Risks

The main risk for the company is that it will not achieve the necessary market penetration over the next three years. The core Quantiferon patent expires in 2012 and the company has patents, or rights to patents, over antigens that run out to 2017. There is a need to ensure the product is well engrained into the healthcare system well before the expiration of patents and competition from generic tests.

We believe there is little competition at present from other latent TB tests.

The emergence of a better active TB test would work in Cellestis' favour as it would encourage better TB screening programs.

Summary

Cellestis is now a profitable business generating sales in the order of $20 million a year based on the recent cashflow statement. The company has strong growth potential and is now trading an attractive level to consider entry or increased exposure to this stock.

Bioshares recommendation: **Buy**

(Cellestis has been added to the Bioshares Model Portfolio)

Bioshares

A Landmark Decision from UWA Litigation with Sirtex?

Sirtex Medical (SRX: $4.15) is the developer and marketer of the Sir-Spheres technology, which are irradiated microspheres that are inserted in to blood vessels in the liver for the purpose of selective radiation of tumour tissue.

In 2004, the **University of Western Australia** (UWA) commenced proceedings against Dr Bruce Gray (a founder of Sirtex and Professor of Surgery at the UWA), Sirtex and the **Cancer Research Institute**. The UWA sought the transfer of shares held by Dr Gray to UWA and a transfer of all rights to the Sir-Spheres and other technology held by Sirtex to the UWA.

The UWA alleged that Dr Gray had breached his contract of employment and had failed to make certain disclosures required by the university's patent regulations.

On April 17, 2008, Justice French, of the Federal Court, delivered his judgment, dismissing the claims made by the UWA and ordered the UWA to pay the costs to Dr Gray and Sirtex in respect of the claims. (Company accounts suggest that Sirtex has spent in the order of $5 million on the litigation. However, it is not known what costs, if any, have been subject to deferred payment.)

A second element to the case was a cross-claim by Sirtex against Dr Gray, in which it was alleged that he breached his duty as a director and engaged in misleading and deceptive conduct. The misleading and deceptive conduct was in respect of the Dr Gray not revealing correspondence between himself and Professor Schreuder of the UWA in 1999. Justice French found that Dr Gray had breached his duties as a director and had engaged in misleading and deceptive conduct. Justice French also found that Dr Gray's failure to disclose certain information to Sirtex was deliberate. Sirtex is entitled to compensation or damages for the loss it has suffered as a result of the misleading and deceptive conduct. Such compensation is expected to be determined at a later date.

The UWA has 21 days to appeal the decision.

Why Justice French ruled against UWA

The historic mechanism by which UWA managed intellectual property was through its Patents Regulations. Justice French found that from 1988 it has effectively abandoned the Patents Committee system provided by the Regulations and did not even use ad hoc committees to manage IP. This abandonment meant that the UWA lacked a means to notify staff of their necessary obligations. In other words, the UWA charge against Dr Gray for non-compliance with the Patent Regulations did not hold because the notification function of the Patent Regulations was not in effect.

A landmark decision?

A second and more important aspect to the denial of the UWA claim against Dr Gray was that unless an express agreement was in place, the *Patents Act 1990* (Cwth) provides that inventions belong to (academic) inventors, while made in the course of research and whether or not they are made using university resources. Justice French stated: "The position is different if staff have a contractual duty to try to produce inventions. But a duty to research does not carry with it a duty to invent." This assessment may see the case recognised as a landmark decision. It is possible that the case will stimulate some universities to examine their approaches to invention and patent management and the character and substance of employment agreements they have with academic researchers.

Commentary

The settlement of the UWA litigation (it is yet to be seen if the UWA will appeal) is important for Sirtex as it now allows the company to conduct its business without litigation matters distracting management from conducting its core business. It also removes a drain on cash flow.

The company should now be in a position to address some substantial growth opportunities, especially in North America, where it has recently established a manufacturing facility in Wilmington, Massachusetts. The beneficial activity of Sir-Spheres product is a highly time dependent product, and delivery from North Eastern USA radio-labelling plant gives interventional radiologists more flexibility in administration of the therapy.

On a first and cursory reading, there would appear to be no specific issues arising from the court case that significantly impact on the commercial biotech sector.

Investment Considerations

Sirtex shares closed up 61 cents or 17.6% on Friday, to finish at $4.15. Our short term perspective is that investors who entered the stock in the last twelve months on the basis of trading on the back of a successful resolution of the case would do well to take some profits while the stock continues to show gains. However, one note of caution for investors relates to the 31% stake in Sirtex held by Dr Gray. As far a we can ascertain Dr Gray is restrained from dealing in his shares unless otherwise agreed by the court. When this restriction might be lifted and what Dr Gray might choose to do with his shareholding is a matter of speculation.

Bioshares recommendation: **Short term – Take profits; Long term – Hold**

Bioshares

Arana Therapeutics Trading at Cash: A Hot Opportunity

Last week we looked at current trends in M&Aactivity in the global biotech industry. High on that list was the continuing interest from major pharmaceutical companies in biological drug discovery and development programs, including antibody technology firms. Australia's leading biological drug developer is Arana Therapeutics (even arguably more capable than **CSL**). Arana has just moved in to Phase II studies and is trading around cash levels (including future expected royalties), which is in no way justified. The Australian biotech sector is flush with opportunities for investors and Arana is high on that list.

Arana's assets

Arana Therapeutics is currently capitalised at $220 million. The company expects to have between $160 - $170 million in cash at the end of September 2008 and expects to receive future royalties from its TNF patents of between $70 - $80 million in total up to 2011. The companies lead program with ART621 has just entered Phase II clinical studies for psoriasis and its second drug candidate, PMX-53, is expected to enter the clinic in early 2009 for the treatment of wet AMD. The company has a number of other preclinical drug candidates in development. It also has several protein optimisation and humanisation technologies, with the strength of these platforms added through the **Evogenix** acquisition last year.

Core driver

The main driver for this stock is the company's lead clinical program. ART621 is a single domain antibody that was originally developed by Domantis (acquired by **GlaxoSmithKline** in 2007).

Arana has made improvements to this antibody and the drug candidate has successfully passed through Phase I clinical testing showing the drug is safe and also importantly, has a favourable pharmacokinetic (PK) profile. The latter point is particularly important. There was a fear that single domain antibodies could be cleared from the system very quickly because of their smaller size. However this antibody candidate has been engineered to improve its half-life characteristics. The PK study showed that ART621 had a half-life of 14 days, similar to that of the successful antibody drug Humira.

It was also seen to have a low initial peak concentration in the bloodstream, indicating a more even distribution over time in the body, also desirable. Some of the anti-TNFdrugs on the market high initial peak concentration which may be responsible for the increased likelihood of infection whilst on anti-TNF anti-inflammatory drugs.

ART621 is being evaluated firstly in the treatment of psoriasis. This will allow the company to get an understanding quickly as to whether the drug is effective in a real human inflammatory disease. This trial Phase II trial will cost in the order of $2 million, compared to $10 million for a Phase II trial in rheumatoid arthritis. Positive data will almost certainly provoke the interest of the major players in the TNF-blocking drug market who sell Humira, Remicade and Enbrel. The market was worth US$13 billion in 2007 for these drugs and is expected to increase to US$20 billion by 2012.

Advantages of ART621

Arana's single domain antibody drug candidate may offer several advantages and improvements over existing drugs on the market. These include a lower cost of production, a more consistent response profile, and potentially better penetration into inflamed tissue. The drug's penetration could be eight times greater than the larger antibody/fusion protein drugs because ART621 is about one-sixteenth the size of antibody molecules.

Arana is planning to file an IND for ART621 in the second half of this year and subsequent to that start a Phase II trial in rheumatoid arthritis (RA) later this year or early next year. That trial should be completed by the end of 2009. If the company can show efficacy in psoriasis or RA, it may be in a position to consider a licensing deal for the program. A Phase II licensing deals for such a program could include an upfront payment of between $20 - $40 million with royalty rates from sales of between 15% - 18% and milestone payments of up to $100 million.

As mentioned, ART621 was initially developed by Domantis. Arana has a license to three additional single domain antibodies from Domantis (GSK). Under the original agreement with Domantis, Domantis is not allowed to develop additional domain antibodies to the same TNF-alpha target.

Bioshares recommendation: **Strong Buy**

Bioshares

Pharmaxis Share Price Buffeted by EMEA Decision

Pharmaxis' (PXS: $1.83) shares fell substantially this week (-21% from a week ago) as investors received news via Pharmaxis' quarterly briefing that the European Medicines Agency (EMEA) would require the company to undertake an additional trial with Bronchitol of six months duration, as part of its development of Bronchitol as a treatment for bronchiectasis. The impact of this decision is that Bronchitol, in this indication, is more likely to be ready for filing in late 2009, rather than early 2009.

Pharmaxis had reported results of a Phase III trial of Bronchitol for bronchiectasis in August 2007, showing that Bronchitol made a highly significant improvement in quality of life after 12 weeks of treatment. The trial was conducted in 362 patients at sites in Australia, New Zealand and the United Kingdom.

For the additional trial, the EMEA has asked Pharmaxis to include two *primary* endpoints: the number of exacerbations requiring antibiotic treatment and quality of life. The inclusion of the antibiotic use endpoint is not the negative it might seem. As we pointed out in our discussion of Pharmaxis in *Bioshares* 243, a trial that yields data that enables the company to sell a drug with superior and wider claims also aids the company's objective of gaining a higher level of reimbursement. In the longer term, the delay with market entry for Bronchitol should be offset by superior revenues. We also now expect that Bronchitol will reach the European market for cystic fibrosis as the same time as for bronchiectasis.

Other developments

Pharmaxis expects to file a marketing application for Bronchitol with the Australian Therapeutic Goods Administration on conclusion of the 12 month safety component of the Phase III study, due mid-2008. Pharmaxis anticipates filing this application in Europe in Q3 2008.

An independent investigator (i.e. not sponsored by Pharmaxis) in the UK completed a Phase II trial of Bronchitol in children with cystic fibrosis, comparing the Pharmaxis drug alone and in combination with the marketed product Pulmozyme made by Genentech. Patients' lung function improved by a similar amount for both drugs (7%), though markedly less with both drugs used together. However, the trial was not larger enough to generate results that were statistically useful.

Aridol

Sales of Aridol for the March quarter were $136,000, continuing to reflect a low number of marketing approvals and yet to be resolved pricing and reimbursement issues. In Europe, Aridol is now approved for sale in Denmark, Sweden, The Netherlands, Ireland and the UK. Pharmaxis expects most of the rest of the countries in the EU to approve Aridol by June 2008.

For the US, Pharmaxis expects to file a New Drug Application for Aridol in Q2 2008, once stability studies have been completed.

Summary

Our view is that Pharmaxis has been oversold and has returned to attractive price levels at which investors can confidently buy into this quality biotech stock. The company is capitalised at $357 million, and with cash assets of $116 million is trading on a technology valuation of $241 million.

Bioshares recommendation: **Speculative Buy Class A**

Bioshares Model Portfolio (18 April 2008)

Company	Price (current)	Price added to portfolio	Date added
Cellestis	$2.27	$2.27	April 2008
IDT	$1.98	$1.90	March 2008
Circadian Technologies	$0.92	$1.03	February 2008
Patrys	$0.29	$0.50	December 2007
NeuroDiscovery	$0.14	$0.16	December 2007
Bionomics	$0.35	$0.42	December 2007
Cogstate	$0.15	$0.13	November 2007
Sirtex Medical	$4.20	$3.90	October 2007
Clinuvel Pharmaceuticals	$0.44	$0.66	September 2007
Starpharma Holdings	$0.32	$0.37	August 2007
Pharmaxis	$1.80	$3.15	August 2007
Universal Biosensors	$0.90	$1.23	June 2007
Biota Holdings	$1.19	$1.55	March 2007
Probiotec	$1.18	$1.12	February 2007
Peplin Inc	$0.53	$0.83	January 2007
Arana Therapeutics	$0.94	$1.31	October 2006
Chemgenex Pharma.	$1.01	$0.38	June 2006
Cytopia	$0.31	$0.46	June 2005
Optiscan Imaging	$0.23	$0.35	March 2005
Acrux	$0.85	$0.83	November 2004
Alchemia	$0.42	$0.67	May 2004

Portfolio Changes – 18 April 2008

IN:

Cellestis has been added. Refer to commentary and analysis on page 1.

OUT:

No changes.

How Bioshares Rates Stocks

For the purpose of valuation, *Bioshares* divides biotech stocks into two categories. The first group are stocks with existing positive cash flows or close to producing positive cash flows. The second group are stocks without near term positive cash flows, history of losses, or at early stages of commercialisation. In this second group, which are essentially speculative propositions, *Bioshares* grades them according to relative risk within that group, to better reflect the very large spread of risk within those stocks.

Group A

Stocks with existing positive cash flows or close to producing positive cash flows.

Buy	CMP is 20% < Fair Value
Accumulate	CMP is 10% < Fair Value
Hold	Value = CMP
Lighten	CMP is 10% > Fair Value
Sell	CMP is 20% > Fair Value

(CMP–Current Market Price)

Group B

Stocks without near term positive cash flows, history of losses, or at early stages commercialisation.

Speculative Buy – Class A
These stocks will have more than one technology, product or investment in development, with perhaps those same technologies offering multiple opportunities. These features, coupled to the presence of alliances, partnerships and scientific advisory boards, indicate the stock is relative less risky than other biotech stocks.

Speculative Buy – Class B
These stocks may have more than one product or opportunity, and may even be close to market. However, they are likely to be lacking in several key areas. For example, their cash position is weak, or management or board may need strengthening.

Speculative Buy – Class C
These stocks generally have one product in development and lack many external validation features.

Speculative Hold – Class A or B or C

Sell

Corporate Subscribers: Phylogica, Pharmaxis, NeuroDiscovery, Biotech Capital, Cytopia, Biodiem, Arana Therapeutics, Starpharma Holdings, Cogstate, Xceed Biotechnology, Incitive, Optiscan Imaging, Bionomics, ChemGenex Pharmaceuticals, Circadian Technologies, Biota Holdings, Stem Cell Sciences, Halcygen Pharmaceuticals, Peplin, BioMD, Impedimed, QRxPharma, Patrys, Labtech Systems

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