ISSN 1443-850X

In this edition...
The launch of a second suite of products from Cogstate's joint venture Axon Sports tells us there is money to be made in the world of US sports, where top line performance is driven by big dollars. Cogstate benefits as a 50:50 JV even though the new products don't spring from its cognition testing platform. Bioniche has opened its commercial-scale food safety vaccine plant. Atcor Medical has identified a new opportunity for its central blood pressure testing product in pacemaker optimisation. Clinuvel Pharmaceuticals is approaching a crossroad this year as it weighs acquisitions as a growth strategy. And the sale of privately held iCeutica re-affirms that developing ways to improve existing drugs is a consistent winner for Australian biotech.
The Editors
Companies Covered: ACG, BNC, CGS, CUV, iCeutica

	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 (May '07 - May '08)	-36%
Year 8 (May '08 - May '09)	-7.3%
Year 9 (May '09 - May '10)	49.2%
Year 10 (May '10 - May'11)	45.4%
Year 11 now commenced	-0.3
Cumulative Gain	**320%**
Av Annual Gain (10 yrs)	**21.2%**

Bioshares is published by Blake Industry & Market Analysis Pty Ltd.
Blake Industry & Market Analysis Pty Ltd
ACN 085 334 292
PO Box 193
Richmond Vic 3121
AFS Licence
No. 258032

Enquiries for *Bioshares*
Ph: (03) 9326 5382
Fax: (03) 9329 3350
Email: info@bioshares.com.au

David Blake
Ph: (03) 9326 5382
Email: blake@bioshares.com.au
Mark Pachacz
Ph:03 9348 9317
Email: pachacz@bioshares.com.au

Individual Subscriptions (48 issues/year)
$350 (Inc.GST)
Edition Number 406 (6 May 2011)
ISSN 1443-850X

Bioshares

6 May 2011
Edition 406

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

Cogstate JV Launches New Product Suite: Axon Potential

Cogstate's (CGS: 19.5 cents) joint venture, **Axon Sports**, has announced it will launch a second product suite within the JV, called Axon Potential. This business will provide brain training tools for athletes. It follows on from the unrelated product the JV has established, which provides concussion testing for school age, college and professional athletes involved in contact sports.

The first product to be released will be a training tool for baseball clubs to purchase. This tool will allow players to train their brains in picking the delivery that is about to be pitched. Currently, batters train with a machine pitching the ball. The product will involve video footage that helps players build point-of-release anticipation skills, with this skill separating experts from novices, according to the company.

Cogstate's partner in the US, **Quixote Investment**, is headed by Rudy Chapa, who previously built up and sold a different athlete training system to **Nike**, called SPARQ. This training system, which is still in use today and supplied by Nike, teaches athletes how to build their physical capabilities, including agility, speed, endurance and power. The new product line will all focus on the training the brain.

Cogstate has not had a substantial input into these new products. However it maintains a 50% ownership in the joint venture. Although the new venture is part of the Axon Sports entity, it has distinctly separate management and staff. The development and provision of such training tools is a core strength of Cogstate's JV partner.

Four Products

The JV has announced four products it will initially sell, including also a football training tool that will teach people to instinctively make better high speed decisions during a game. A third product will offer to build soccer anticipation skills and situation assessment. A fourth product is for learning the basics of American football, including vocabulary, formations and blitz schemes. The company says it is working with the world's top researchers and scientists to develop these new products. The Managing Director of Axon Potential is Jason Sada, who founded one of the first simulated sports training businesses, called **GridIron Technologies**.

Cont'd on page 5

Clinuvel – Approaching Crossroads

It should indeed be a pivotal year for Clinuvel Pharmaceuticals (CUV: $1.905). The company is awaiting the results from two late stage clinical studies in its lead application in EPP (a condition characterised as a severe intolerance to sunlight). Assuming positive progress, the company will lodge a new drug approval submission with European regulators by year's end. The company has announced approval to start a Phase II trial in people with skin discoloration (vitiligo), which is potentially the biggest market for it drug. Clinuvel has also announced its intention to consider acquisitions, including revenue generating businesses.

Phase III Results in EPP

This month Clinuvel expects to announce results from its US Phase II EPP trial (study CUV030). This is a 100 person trial being conducted in six sites in the US. The primary endpoint is changes in the severity of photo-toxic reactions compared to placebo over a six month timeframe.

In July the European Phase III study (CUV029) is due to finish, after recruiting around 50 patients in total.

Last week the company met with European regulators to discuss its new drug application for Scenesse. News of the outcome from the meeting should become available shortly.

In Europe there are around 4,000 patients with the EPP condition and the realistic, addressable market size is estimated at $50 million a year.

Italian Sales

Under a special scheme, Clinuvel's drug has been available to patients in Italy, selling for €5,375 per dose. The company has generated around $500,000 of sales, having sold 73 of the Scenesse two monthly depot injections since it was made available last year.

Clinuvel employs approximately 30 staff, with most of that team now based in Switzerland, close to its first major market.

Vitiligo – A Major Opportunity for Clinuvel

In March this year the company received approval to conduct a Phase II trial in people with Vitiligo. Vitiligo is a skin condition characterised by white de-pigmented skin. At the moment the treatment for this condition involves narrowband ultraviolet light therapy. However this therapy is very demanding, requiring 18 months of therapy, three times a week.

Clinuvel believes that using its drug in conjunction with ultraviolet light therapy could significantly reduce the treatment period. In the trial, patients will be treated with ultraviolet light three times a week for six months, one third of the standard treatment period. Half of the patients will also receive a one month depot injection of Scenesse every month. Patients will be observed for six months after the trial.

The trial will be conducted in three sites in the US and three in Europe, in France, Italy and Switzerland. Up to 120 patients will be recruited into the trial. CEO Philippe Wolgen believes if the drug works in vitiligo, it will be a transforming event for the company. If all goes well, the company believes it could be in a position to enter the vitiligo market in 2014, after potentially filing for approval in the US in 2013. This is an ambitious target.

Wolgen believes there is strong interest in its program, with two of the nine world's experts in this area being principal investigators in the Clinuvel trial. He believes there will be no shortage in demand in recruiting patients for the trial.

UVB treatment seeks to stimulate the migration of melanocytes from melanocyte stem cells around hair follicles in the skin. Clinuvel believes there is a strong scientific basis to why its therapy should be successful when used in conjunction with narrowband UVB, by restarting the cellular machinery involved in repigmentation of the skin. Around 45 million people in the world have vitiligo and the company estimates the potential market size for its product in this area to be worth $400 million a year.

Aside from the large market size in vitiligo, an appealing aspect is that there is an existing market for the treatment of vitiligo. The Clinuvel treatment could be used in conjunction with that therapy to improve outcomes and significantly reduce the time burden on patients, and thereby improving patient compliance. In Clinuvel's other key areas such as EPP, the company needs to establish a market for its product.

Revenue Generating Acquisitions Need to Stack Up

The company recently announced it will consider acquisitions of revenue generating businesses. This decision is questionable and perhaps expresses some frustration within the company of the length of time to bring its lead product to market.

Clinuvel listed on the ASX in 2001 (as Epitan) and the original research dates back to the early 1990s. Wolgen, who has done an excellent job in driving the company forward, has been at its helm for five years. Approval of Scenesse in Europe is at least another 18 months away if the company files its drug for approval by the end of 2011. It's perhaps understandable that investors and management are experiencing some fatigue and want to accelerate commercial success within the company.

An acquisition of a revenue generating business that provides a distribution arm for its product may make sense, as may an acquisition of other orphan drug programs, given the considerable experience that has been built up within the company in the regulatory and other commercialisation aspects of niche orphan drug development.

The company needs to show that it is not repeating mistakes of the past, where is acquired a range of dermatology products to distribute and sell in Australia and then reversing that strategy and selling the business.

Summary

Clinuvel's CEO Philippe Wolgen believes vitiligo is the most fascinating of opportunities the company has come across, in relation to the application of its Scenesse therapy, and one that could transform the company.

– Cont'd over

Bioniche's 'Econiche' Food Safety Vaccine

In *Bioshares* 400, we discussed Bioniche's (BNC: $1.25) Urocidin bladder cancer therapeutic candidate. The company however operates two other business units, one of which is a cash-generating veterinary products business and the other is a Food Safety Division.

The Food Safety division was established in 2001, 22 years after Bioniche's foundation in 1979. The lead program being managed in the Food Safety Division is a vaccine designated Econiche, which is designed to immunize cattle against the O157 strain of *E. coli* bacteria. This bacteria has been responsible for illness in humans at such a scale that warrants frequent reporting and investigation by disease control authorities.

The US **Centers for Disease Control and Prevention** (CDC) has investigated at least two outbreaks per year for the last few years (see table at right) and some deaths have been reported. A more serious problem is that the infection can cause a form of kidney failure termed hemolytic uremic syndrome. A predominant source of the infection has been beef or beef products. However, it is possible that even non-beef related infections could be potentially have livestock origins.

The food safety argument for *E. coli* vaccination is that intensive farming and cultivation practices may have coincided to increase the incidence of *E. coli* outbreaks. Vaccination could introduce a new level of safety for consumers of both beef and vegetable products.

The vaccine was approved by the **Canadian Food Inspection Agency** in October, 2008. Data for the regulatory submission included data from controlled challenge study conducted at the **University of Saskatchewan**.

A total of 60 animals were included in the study, with 30 vaccinated calves and 30 placebo-treated animals. The vaccination group were vaccinated three times (at days 0, 21 and 42) and then infected at day 56 by oral-gastric intubation.

Peak shedding of the virus occurred on days three to six post-vaccination, with shedding monitored over 14 days. The researchers showed the vaccinated animals shed less of *E. coli* than the placebo group following vaccination, and fewer vaccinated animals shed the virus. This was statistically significant. (Viral shedding refers to the successful replication and expulsion of a pathogen such that it continues to exist outside the host organism.)

Commercial-scale Manufacturing Facility Launched

The vaccine is to be manufactured at Bioniche's facility in Belleville, Canada, which was officially opened last month. The launch of the facility is a significant step forward for the company as it will allow the company to supply meaningful commercial quantities of the vaccine.

According to Bioniche, the initial commercial opportunity for the vaccine is represented by an estimated 113 million beef and dairy cattle in North America, of which 25 million are held in intensively managed feed lots. The company has priced the vaccine at US$3 per dose, with three doses required for course of vaccination.

Recent CDC Investigated 0157 E coli Outbreaks

Date	Vehicle	Cases	HUS	Deaths
Mar-11	Lebanon Bolgona Sausage	14	0	
Apr-11	In shell hazlenuts	8	0	
Nov-10	Bravo Farm Cheeses	38	1	
Jan-10	Beef - National Steak & Poultry	21	1	
Nov-09	Beef - Fairbank Farms	26	5	2
Jul-09	Beef - JBS Swift Beef	23	2	
Jun-09	Cookie dough - Nestle Toll House	51	10	
Jul-08	Beef - Kroger Nebraska	49	1	
Nov-07	Pizza - General Mills	21	4	
Oct-07	Topps Ground Beef Patties	40	2	
Oct-06	Fresh Spinach	102	31	3

HUS: hemolytic uremic syndrome

The vaccine was licensed from the **Alberta Research Council**, as a licensee of **University of British Columbia** and the **University of Saskatchewan** in 2001.

One of the challenges in accessing the US market is that the US Department of Agriculture has requested that one of the manufacturing steps be conducted in the USA.

Bioniche held C$27 million in cash in early March, 2011.

Bioniche is capitalised at $126 million.

Bioshares recommendation: **Speculative Buy Class A**

Bioshares

– Clinuvel cont'd

The company is following a well proven and successful orphan drug development path, where niche indications (EPP) are selected first to bring a drug to market, and then growing that market substantially by expanding into larger indications.

In the next six months the company may be in a position to file its drug for wider European approval, and results from the world's first drug trial in vitiligo should start to emerge in the coming year. The company remains well funded, with $20 million in funds at the end of last March.

However, Clinuvel needs to make sure it does not lose focus with acquisitions that are not relevant nor synergistic to its existing business. Clinuvel is a one drug company, however, risk mitigation is an issue that many investors choose to manage through their own portfolio diversification decisions.

Clinuvel is capitalised at $58 million.

Bioshares recommendation: **Speculative Hold Class A**

Bioshares

Atcor Medical – At the Early Stage on the Adoption Curve

Institutional interest has been building in Atcor Medical. This week **Australian Leaders Fund** announced it had increased its stake to just over 5%. In February **Australian Ethical** announced it had increased its stake to 6.4%. The company now has about five funds on its register.

Atcor is similar to **Cogstate**, with most of the company's business in the US. This means the strong Australian currency is hurting the top and bottom line result. It has 14 staff in the US and the same number in Australia. The company is maintaining its expectation of double digit growth in sales in constant currency terms. The company had just under $2 million in cash at the end of March. Its goal remains to move into a profit neutral position in the next financial year.

The interest from funds in this stock is likely for a number of reasons. Atcor Medical is an excellent long term investment option, with a low capitalisation at the moment of only $16 million. At some stage the demand for non-invasive central blood pressure measurement will take off.

Atcor has developed the gold standard in non-invasive central blood pressure testing, with over 400 peer-reviewed publications. Central blood pressure testing provides accurate information of the health of a person's arteries, specifically a person's arterial stiffness. At some stage, it is very likely, in our view, that the test will be widely adopted by specialists such as cardiologists, and then by GPs.

However, when that acceleration in adoption occurs is difficult to assess. At the end of last year there 115 were specialists, cardiologists and nephrologists (kidney specialists), using the device. The company is targeting 150 specialists to be using the device by the end of June. Most patients with kidney disease die from associated high blood pressure. In the US, 24 of the top 25 nephrology hospitals use the Atcor instrument.

In the US there are around 20,000 cardiologists and 6,800 nephrologists, so there's still a long way to go to getting the device accepted by those specialist groups. Although the company generated a net loss of $1.4 million in the first half of this year, CEO Duncan Ross says the company could be very profitable if it wasn't investing in long term growth for the business. Around 70% of the company's current costs go toward growing its business.

Pharma Business Driving Sales in the Meantime

Close to 60% of the company's revenues come from sales to the pharmaceutical industry, where the test is used to monitor a persons health in clinical studies. Although the test has been used in

– Cont'd over

Private Perth Biotech iCeutica Sold to Iroko Pharmaceuticals

The privately held, Perth based iCuetica was recently acquired by **Iroko Pharmaceuticals LLC**, which is also a privately held pharmaceutical firm based in Philadelphia with 47 staff. Iroko was founded in 2007.

While the value of the acquisition was not disclosed, foundation investors **Yuuwa Capital** said that first round investors made a 10-fold return on their investment. iCeutica was founded in 2004 as a spin-out of technology invented at the University of Western Australia. Yuuwa's remaining life science investment is Melbourne-based shark antibody company Adalta. Yuuwa has $40 million in funds under management.

iCeutica has been developing a re-formulation technology (Solumatrix) that is capable of producing drug particles that are up to 10 to 200 times smaller than normal drug particles. A patented milling process is used to reduce the size of the particles. The process also protects the fine particles from agglomeration. The benefit of the technology is that drug dissolution is improved.

iCeutica has advanced into clinical development, including meloxicam, a re-formulation of Mobic for the treatment of inflammatory conditions, and metaxalone, a re-formulation of a muscle relaxant sold as Skelaxin. In both cases, the re-formulated product has improved the solubility profile of the compound.

Three other compounds were partnered with Iroko Pharmaceuticals and were re-formulations of non-steroidal anti-inflammatory drugs, which Iroko has advanced into Phase III studies.

Significance for the Australian Biotech Sector

Perhaps the chief significance of the iCeutica acquisition is that it has delivered a high return to investors in a reasonable time frame of seven years. We estimate that iCeutica was sold to Iroko Pharmaceuticals for around $50 million.

A second salient feature is that iCeutica was not involved in new drug development but, like **Acrux**, **Mayne Pharma**, **Phosphagenics**, **QRxPharma, Starpharma** and others, is working to improve the acceptability and performance of known drug compounds. The speedier path to market, lower cost of capital and lower quantum of capital for developing re-formulated or re-engineered drugs with new patent protection will continue to be an attractive arena for investors in Australia and elsewhere.

The Chairman of Iroko Pharmaceuticals, Osagie Imasogie, was for a period iCeutica's CEO. He said in a recent briefing that Iroko's strategy was to be the sole investor in the firms it partners with. This was a consequence of his time spent at **GlaxoSmithKline Ventures**, where he observed significant distractions occurring when syndicated deals took place. As an investor, Imasogie said his focus was simply on maximising value. By being a sole investor, he has never had to worry about the effects of 'down' rounds on his investments, he said.

Imasogie also said that initially, Iroko waited for iCeutica to mature into a product company before it partnered with the firm in 2007, believing it was more important to license products that license a technology platform.

Bioshares Model Portfolio (6 May 2011)

Company	Price (current)	Price added to portfolio	Date added
Bioniche	$1.25	$1.35	March 2011
Somnomed	$1.45	$0.94	January 2011
Phylogica	$0.068	$0.053	September 2010
Sunshine Heart	$0.048	$0.036	June 2010
Biota Holdings	$1.23	$1.09	May 2010
Tissue Therapies	$0.50	$0.21	January 2010
Hexima	$0.35	$0.60	October 2008
Atcor Medical	$0.12	$0.10	October 2008
Impedimed	$0.67	$0.70	August 2008
Patrys	$0.14	$0.50	December 2007
Bionomics	$0.65	$0.42	December 2007
Cogstate	$0.20	$0.13	November 2007
Sirtex Medical	$5.49	$3.90	October 2007
Clinuvel Pharmaceuticals	$1.92	$6.60	September 2007
Starpharma Holdings	$1.28	$0.37	August 2007
Pharmaxis	$2.92	$3.15	August 2007
Universal Biosensors	$1.28	$1.23	June 2007
Alchemia	$0.67	$0.67	May 2004

Portfolio Changes – 6 May 2011

IN:
No changes.

OUT:
No changes.

– Cogstate cont'd

Axon Sports progress

Axon Sports is also selling a cognition testing product that has been developed by Cogstate. The product was launched in August last year. It's too early for the JV to comment on progress, however interest is expected to ramp up from the start of the new school year in August this year, with Eastbay (Footlocker) signed on to distribute and market the product.

The issue of concussion in sport and the way it is managed continues to be a major issue in the US, and is spreading to Australia. All ARL teams in Australia and most AFT teams have signed on too conduct baseline testing using the Cogstate product. The joint venture for this product current applies only to the US but can be extended to the rest of the world if certain milestones are met.

Progress in Underlying Business

The underlying business in Cogstate at the moment is the use of the company's software product to assess cognitive function in clinical trials, particularly in the areas of schizophrenia and Alzheimer's disease.

Sales in the March quarter were down, at $1.65 million from $2.3 million in the December quarter. However it worked out to be a good cash flow quarter with net operating cash flow of just $754,000. The company had $2.9 million in cash at the end of March.

Sales to date in the first nine months are down 25% to $5.6 million, with the strong Australian dollar having a significant negative impact. We expect revenue, in constant currency terms, to be flat for the year the full year at around US$8 million. Cogstate is capitalised at $13 million.

Bioshares recommendation: **Speculative Buy Class A**

– Atcor cont'd

Phase I, II,III and IV clinical studies (Phase IV studies are marketing studies after a drug is approved), it has yet to be used as an endpoint in a pivotal (Phase III) study. Instead it is used as a secondary measure to monitor safety. The company has also secured only a fraction of this market, which is estimated to be worth US$275 million a year. The company currently has US$16.5 million in identified sales opportunities, for which it expects to be successful in around 65% of cases.

Reimbursement will be One Major Driver

Gaining widespread reimbursement will be a major driver for product adoption. The Renal Physicians Association has committed to submit a CPT reimbursement application for the technology, expected by November this year, with CPT reimbursement code possibly in place by July 2012.

Optimising Pacemaker Function – Opportunity?

The company is considering partnering target markets for the product. One possibility is using the Atcor test to optimise pacemaker function, which the company believes its device is more effective and quicker that existing procedures that use an echocardiogram.

The echocardiogram measures flow and is a visual measure, whereas the company's Sphygmocor device would provide a more accurate digital measure, where pressure is the variable being measured. Around 1.5 million people undergo pacemaker optimisation globally each year, with about half of those done in the USA. There is also a fixed $300 reimbursement for this procedure. The Sphygmocor device could be sold by another company into this market as an OEM device by a company that has a complementary product range.

Atcor is capitalised at $16 million.

Bioshares recommendation: **Speculative Buy Class A**

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. For both groups, the rating "Take Profits" means that investors may re-weight their holding by selling between 25%-75% of a stock.

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: Pharmaxis, Starpharma Holdings, Cogstate, Bionomics, ChemGenex Pharmaceuticals, Circadian Technologies, Biota Holdings, Mayne Pharma Group, Impedimed, QRxPharma, Patrys, LBT Innovations, Hexima, Mesoblast, Atcor Medical, BioMD, Tissue Therapies, Viralytics, Phosphagenics, Immuron, Phylogica, Bluechiip, Psivida

Subscription Rates (inc. GST)

48 issues per year (electronic distribution): **$350**

For multiple email distributions within the same business cost centre, our pricing structure is as follows:	$550	2-3 email addresses
	$750	4-5 email addresses
	$950	6-10 email addresses

To subscribe, post/fax this subscription form to:

Bioshares
PO Box 193 Richmond VIC 3121
Fax: +61 3 9329 3350

I enclose a cheque for **$** made payable to **Blake Industry & Market Analysis Pty Ltd**, or

Please charge my credit card **$** MasterCard ☐ Visa ☐

Card Number ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Signature _____ Expiry date _____

Subscriber details

Name _____

Organisation _____

Ph ( ) _____

Emails _____

_____

_____