

**In this edition...**

Universal Biosensors has signed an important deal with Siemens Healthcare Diagnostics covering the application of its diagnostic platform in coagulation testing. The deal follows UBI's first deal with Lifescan for blood glucose monitoring. UBI has received positive validation with this deal which adds a welcome breadth to the company's business.

Prana Biotechnology has clarified its business, moving the Huntington's disease application of its PBT-2 compound to the lead position of its portfolio, and relegating the Alzheimer's application to a second line.

We also flesh out two companies with multiple business operations, Allied Healthcare Group and Helicon Group.

**The Editors**

**Companies Covered: AHZ, HCG, PBT, UBI**

	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	-17.6%
<b>Cumulative Gain</b>	<b>247%</b>
<b>Av Annual Gain (10 yrs)</b>	<b>21.2%</b>

*Bioshares* is published by Blake Industry & Market Analysis Pty Ltd.

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Individual Subscriptions (48 issues/year)

**\$375** (Inc.GST)

Edition Number 424 (9 September 2011)

ISSN 1443-850X

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# Bioshares

9 September 2011

Edition 424

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

## **UBI Strikes Second Major Commercial Deal**

Universal Biosensors (UBI: \$1.00) has struck its second major product deal, with a global exclusive license for the use of its diagnostic platform in coagulation testing with **Siemens Healthcare Diagnostics**. The deal is for access to UBI's PT/INR test, which is a blood coagulation test used to continuously monitor coagulation levels in patients on chronic warfarin therapy.

In a deal that the company had been promising to finalise by year's end, UBI will receive an upfront fee of US\$3 million, six milestone based payments, and will manufacture and will receive a transfer price for each strip made and supplied.

For UBI, it's a very important deal for a number of reasons. Firstly, it confirms the utility of the UBI technology platform, with this being the second commercial test for the technology to be applied to. It's also the second product licensing agreement with a major international healthcare group, the first being with Johnson and Johnson's Lifescan for its glucose strips, which are now on the market (US launch pending).

CEO Paul Wright said the deal is also an excellent broadening of the company's business.

The company is now less reliant on the success of a single product from the one customer. The future for UBI now appears substantially more robust and the risk profile of the business has been lowered whilst maintaining a high growth outlook, which are very attractive characteristics for investors.

### **Product Timing**

UBI was previously expecting to file the PT/INR product for approval in the first quarter of 2012. This deal requires some modifications to the diagnostic test, largely around product specifications and these are not major changes. As a result we anticipate the test should be submitted for regulatory approval later in 2012, with product launch occurring at the earliest in late 2012, but more likely in 2013.

### **Deal Terms**

Siemens has access to exclusive rights to the technology for use in the point-of-care coagulation market in the hospital setting and non-exclusive rights to use in the ambulatory (out-patient) setting. The use in the patient self-testing market has been excluded in this deal.

UBI will manufacture the strip, receiving an undisclosed fee for each strip supplied, and this will vary depending on volume. There is also a profit sharing arrangement if sales of the strip exceed initial forecasts.

Siemens has the right to eventually bring in-house the manufacturing, however UBI will continue to receive a fee for each strip sold for the first 10 years. UBI will receive six milestone payments around completing product feasibility, achieving regulatory submissions and product launches.

– *Cont'd on page 3*

## Allied Medical Group – A Diversified Healthcare Business

Private company Allied Medical Group (AHZ: 4.8 cents) has completed its merger (in June this year) with BioMd and has been renamed Allied Healthcare Group (AHZ). Its aim is to build a diversified healthcare company. The company has a medical products division, which generated revenue of \$6.4 million last financial year. It is continuing with the commercialisation of the tissue engineering technology from BioMd. And it's longer term, company changing technology comes from its investment in DNA vaccine developer, Coridon.

Allied Medical was spun out of **Fortescue Metals Group** and in fact the two companies share many shareholders and also a common director. Its broader aim is to build its medical products business, both organically and through acquisitions, to a business that generates revenue in the order of \$25 million a year in the next few years, to commercialise the BioMd and Coridon high value technologies, and add additional high value R&D programs to its portfolio. A potentially important asset that the company has is its shareholder base. If the company can achieve a market value in excess of \$100 million, then it can utilise its shareholder base to fund its programs to later stages of development, and possibly even all the way to market where it makes sense to do so.

### The Coridon Investment

Allied has invested in vaccine developer **Coridon** in Queensland. Coridon is developing DNA vaccines using technologies that were invented by Ian Fraser and other researchers. Allied will invest up to \$6 million to Coridon for a 55% ownership stake. According to the company's annual report, it had a 23.9% stake in Coridon at June 30, having invested \$1.4 million.

### The technology

Most human vaccines on the market initiate only an antibody response. They generally comprise of peptides or proteins with adjuvants that when injected, cause the body to make antibodies that circulate in the bloodstream, priming the immune system to attack foreign particles.

Coridon is developing DNA vaccines. These types of vaccines have been successfully brought to market in the animal health market. Examples are **Merial's** canine vaccine for melanoma, **Novartis'** DNA salmon vaccine, **Pfizer's** West Nile Virus vaccine for horses, and a DNA-based product approved in Australia for pigs used as a growth promotant.

In the human health area, the leading company is **Vical**. Vical has a DNA-based metastatic melanoma vaccine in Phase III trials and a DNA cytomegalovirus vaccine in Phase II trials. The latter program was partnered with **Astellas Pharma** from Japan in July this year in a deal including US\$25 million in upfront payments.

Coridon's vaccines use DNA that encodes for cells to produce those same peptides or proteins. There are two parts to the Coridon technology.

What makes the DNA vaccine unique is that it produces both an antibody response and a T-cell response. Antibodies protect the body from infection and these types of vaccine are used to pre-

vent disease. T-cells will attack infections inside a person's cell, thereby offering a treatment for an infection.

### Antibody component

For the antibody part of the vaccine, Coridon has developed a table of codons, which are part of the nucleotide sequence that make up DNA and RNA. The codons are involved in controlling the level of production of a specific protein. Coridon has developed the best codon usage (in a table format) that delivers the most favorable expression of proteins from the cell. Those are the same proteins that prime the immune system and that are traditionally injected into a person in a standard vaccine.

### T-cell component

The second part of the vaccine delivers a T-cell immunity to the body. It combines the DNA for the antigen of interest, and combines it with what is called 'ubiquitin', the production of which is also encoded in the vaccine. (Our understanding is that this part is not novel but combining it with a DNA antibody vaccine is.) The ubiquitin brings the antigen produced to the proteasome inside the cell, which processes it into peptide fragments thereby delivering the enhanced T-cell response against infected cells.

### HSV-2 program

The first clinical program is expected to start in early 2012 as a Phase I study. That program will be a vaccine against the Herpes Simplex Type 2 virus. It's against a known target, with GlaxoSmithKline having failed in a major study using the same protein in a traditional vaccine approach. Phase II programs could start in 2013.

### Other advantages of DNA vaccines

The cost of goods for DNA vaccines is reasonably low. Also the vaccines will not need to be frozen or refrigerated, with DNA stable at room temperature.

Coridon also believes it has know-how in how to deliver the technology to ensure the DNA is taken up by cells. Coridon uses a liquid DNA vaccine with no adjuvant that is delivered intradermally. Other DNA vaccines are trialing the use of adjuvants or electric charges to deliver the DNA into the cell.

### Other vaccines

The company is developing a vaccine against the Epstein Barr virus and it is considering using the technology to develop a therapeutic vaccine against cervical cancer.

### Tissue engineering technology progress (Called ADAPT, acquired through BioMd)

The ADAPT tissue engineering technology is moving closer to market. The company expects to gain approval in Australia to start selling its Cardiocel heart patch early next year. Cardiocel is currently in the registration process, with BioMd having funded around \$8 million in the development of the technology. The company completed a successful trial treating heart deformities in children in South Africa. Allied will use its existing sales network to sell the product in Australia.

*Cont'd over*

*Allied Healthcare Group cont'd*

In 2010 an R&D collaboration was formed with one of the major heart valve companies, looking to use the ADAPT technology to re-engineer tissue heart valves. The problem with tissue heart valves is the calcification that occurs. This hardening of the valve requires the valve to be replaced, a procedure which Foreign Minister Kevin Rudd recently had to undergo following the hardening of his tissue heart valve from an organ donor he received 18 years earlier.

Allied is completing its preclinical testing of commercial heart valves from its unnamed partner. The company appears confident that a licensing deal can eventuate. The heart valve market is worth US\$700 million in North America and growing at 16% a year. There is also a very large market in Asia, from mothers experiencing rheumatoid fever during pregnancy.

The ADAPT technology has shown to deliver less calcification and better integration with surrounding tissue. The goal is to implant a tissue that shows no calcification for 25-30 years. Allied uses bovine tissue that is re-engineered, delivering a collagen scaffold that does not become fibrotic, does not shrink and offers properties more similar to that of human tissue. The re-engineering also prevents any immune response occurring from placing a foreign material into the body.

Allied is also continuing preclinical work on a product for pelvic

floor procedures, and there is the potential to use its re-engineered tissue as a scaffold for stem cell delivery. Whilst the company had some issues with infection in a clinical pelvic study, Executive Director, Michael Bennett, says this product is a regenerative patch which facilitates growth, including that of bacteria if the area is not clean.

Allied owns 77.23% its subsidiary Celxcel Pty Ltd, which holds the rights to the ADAPT technology.

**Summary**

Allied Healthcare Group is capitalized at \$27 million. It had \$1.3 million in cash at the end of June. A further \$3 million is expected to be received from the exercise of options.

For Allied the plan is to build a long term healthcare business with biotech assets that it can commercialise. It has 3200 shareholders, many of which are also Fortescue shareholders, which itself is an asset should Allied seek to lift the stakes and decide to climb aggressively up the value chain. At this stage, the company appears to be positioning itself to do just that should the opportunity arise.

*Bioshares* recommendation: **Speculative Buy Class B**

**Bioshares**

*UBI cont'd*

Siemens also has the first look at another coagulation product being developed by UBI, being the D-dimer test.

One of the additional appeals of this deal is that for Siemens this test helps it break into a new market, rather than replace an existing product, which is the case with the glucose product being sold by Lifescan.

The UBI technology offers substantial cost benefits in manufacturers to existing products. It also offers better accuracy and lower blood sample volume requirements than other products on the market due to the unique configuration of its test.

**The PT/INR Testing Market**

The current global market for point-of-care PT/INR testing is currently valued at around \$600 million a year, with roughly \$450 million of that being in the hospital and clinical market, and about \$150 million being in the patient self-testing market. Over the next nine years the overall market is expected to reach \$1.5 billion a year.

UBI is continuing discussions with potential licensing partners for the PT/INR test for patient self-testing. This is an emerging market in the US but more established in Germany.

**Siemens' Global Presence**

UBI has partnered with one of the world's largest healthcare suppliers. Siemens is also a leader in the diagnostic haemostasis market (in centralized pathology testing) and a leader in the point-of-care urine testing market. Whilst it does not have a presence in the

hospital haemostasis point-of-care market, one of the attractions of the deal for Siemens looks to be that this product allows it to build a substantial presence in this market.

**Summary**

UBI has completed its second global deal with a high-end, solid partner, giving it a path to market for its second global diagnostic product. The deal also should transform UBI into a robust and sustainable business offering high growth potential for these and other products in development.

UBI is capitalised at \$159 million and had \$17.5 million in cash at June 30.

*Bioshares* recommendation: **Speculative Buy Class A**

**Bioshares**

## Helicon Group – A Biotech Assets Play

Helicon Group (HCG: 2.5 cents) is a Melbourne-based company that has adopted the model of asset development, acquiring assets cheaply that have been stalled in development because of funding issues or changes to the owners' plans for the technology. It intends sell or license these technologies once various near-term development milestones have been achieved. Helicon was originally Perth based and sold pharmaceuticals and medical products into China.

The company is agnostic about the technologies it has or will acquire, preferring to acquire technologies which it believes it can add value to in a shorter space of time for licensing or acquisition.

Helicon first acquired Leading Edge Instruments, which had been created to hold BreatheAssist, a nasal dilation technology, and Vibrovein, a novel vibrating needle technology. More recently it acquired Linguet, a buccal (under-the-tongue) drug delivery technology, and it is acquiring Aspen Medisys, a nano-particle heat generation technology designed to target and destroy tumours.

### Aspen Medisys – Using Heat to Destroy Tumours

Helicon is in the process of acquiring Aspen Medisys which was spun out of US firm **Aduro Biotech**. Aduro Biotech was formed through the merger of **Triton Systems'** spin-out **Triton Bio-Systems** and **Oncologic** in June 2008.

Aspen Medisys has developed an iron oxide nano-particle technology for treating tumours. The technology is a tissue targeted

approach, and in that way is similar to **Sirtex Medical's** SirSpheres, which are radio-active resin beads designed to lodge in the capillaries of the liver. However, Aspen Medical's nano-particles are thousands of times smaller than Sirtex Medical's SirSpheres.

Alternating magnetic fields are used to heat the nano-particles, which can be injected into tumours or even delivered by antibodies. A factor that has limited the commercialisation of the technology has been the size of magnetic field generation devices. Advances in the miniaturisation of field generation devices has now opened up an opportunity for the technology in cancer treatment.

Aspen Medical's closest competitor is a German company, **MagForce**, which has developed the NanoTherm product.

Helicon expects that difficult to treat head and neck tumours and brain tumours may be the types of tumours best addressed by the technology. However, the technology will at the end of the day sit as an adjunct therapy alongside surgery and chemotherapy.

One area of commercial application that may be taken up sooner is in veterinary medicine where certain cancers afflicting dogs and horses potentially being amenable to this treatment modality.

Aspen Medisys is to be acquired by Helicon Group for \$1.5 million in scrip, which is also contingent on Helicon gaining shareholder approval and contingent on Helicon raising \$3 million for

### Assets Held or Being Acquired by Helicon Group

	Vibrovein	BreatheAssist	Aspen Medisys	Linguet
Description	Electronic vibration device for needles	Disposable soft polymer plastic device - nasal dilator/delivery device	Thermo nano-particles to treat cancer	Buccal drug delivery technology
Date of Transaction			Announced agreement to acquire: Aug, 2011	Completed IP acq: Aug, 2011
Entity	Leading Edge Instruments Ltd	ASAP BreatheAssist Pty Ltd	Aspen Medisys LLC	IP was acquired - "NewCo" to be formed
Interest	100%	100%	100%	100%
Consideration	NA	NA	\$1.5 m in scrip (Contingent on shh approval and raising \$3M) \$1 m in scrip (on completion of technology report) \$0.5 m in scrip on first sales \$0.5 m in scrip on sales >\$10 M	\$50,000 upfront  1.375 million shares  15% of Linguet royalties  Call option over "New Co" - 25 million shares to terminate Call option

Milestones	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2
		Complete design for manuf. and scale-up; commence business dev.		Complete first transaction					Commence business dev.	Complete design for manuf. and scale-up; complete sports performance testing	Commence efficacy study in comp.animals	Complete first transaction			Complete first transaction	Complete develop. plan
			Complete commercial prototype and utility validation		Complete first transaction								Complete GCP-GLP validation program			

*Helicon Group cont'd*

the development of the Aspen Medisys technology. A further \$1 million in scrip is to be paid on the successful completion of a technology report and then \$1 million in shares will follow if other milestones are met.

On raising \$3 million, Helicon's goal is to complete a transaction for the Aspen Medisys technology by 2013 Q2. By then the company intends to have completed a registration study and developed dosimetry software required to support the use of the technology to treat for example, head and neck cancers.

**BreatheAssist – Generates Clinical Data**

The BreatheAssist nasal dilator/delivery device is being developed with the sports performance market in mind as a first commercialisation opportunity.

The company's most recent progress with this product was the completion of a clinical trial in 20 subjects. The trial showed the device provided a 37.6% increase in nasal airflow over baseline. The company will now conduct further studies to explore the increase in nasal airflow and its effect on exercise performance.

The company intends to commence licensing discussions for BreatheAssist in 2011 Q4.

**Vibrovein – Enhancing IP**

Helicon recently completed studies of the Vibrovein technology at Invetech's facilities in Melbourne. These will be used to strengthen the IP around the technology. The studies now mean the company can explain in far more precise engineering and physics terms why a vibrating needle performs differently to an inert needle, perhaps of which the most important point of difference is that a Vibrovein needle is less painful.

Helicon is aiming to commence licensing discussions for the Vibrovein technology in 2011 Q4.

**Linguet – For a Faster Acting Viagra?**

The Linguet technology is a tablet or lozenge formulation technology that releases an active drug ingredient in the mouth so that the drug is absorbed through the mucosa of the cheek, a highly permeable tissue which is rich in blood supply. The advantage of the system is that drugs that have difficulty passing through the gut or have liver toxicity issues can be more safely and effectively delivered.

A potential advantage of buccal drug delivery systems is that lower doses of active drug can be delivered compared to other methods of delivery, for example through the gut where drug is lost through degradation.

Lozenges can also dissolve within 10-15 minutes, which also offers an advantage if a drug's benefit is limited by slower release through administration through the gut (e.g. Viagra)

There are many drug actives for which the Linguet system can be applied, but one potential area of application is with the biphosphanates class of drugs used to treat osteoporosis.

The formulation comprises a polyethylene glycol base to contribute hardness and a dissolution rate, a suspension agent, a flowing agent, a sweetening agent and an active pharmaceutical ingredient.

Commercialising this technology could take several paths including licensing of the IP for specific products to a pharmaceutical company or sale of the IP to a drug platform company.

**Management**

The CEO of Helicon Group is Fabio Pannuti whose expertise is in sourcing deals and strategy setting. The company recently obtained the services of Ross MacDonald, who was formerly the CEO of **Living Cell Technology**. MacDonald has extensive experience in commercialising pharmaceuticals, having also worked previously at **Sinclair Pharmaceuticals, Steifel Laboratories, Connetics, F.H. Faulding** and **Amrad**. MacDonald brings valuable business development skill set to Helicon

**Investment Appraisal**

Helicon Group is an emerging and interesting opportunity in the biotech investment landscape, with an ambition to create substantial returns for investors. The company must prove that it can deliver on generating speedy returns from some of its assets before investors will support the company with more funds for asset development projects with a slightly longer investment horizon. The recent addition of Ross MacDonald to the company's management structure adds to the credibility of the company's goal of successfully meeting its objectives.

We do not expect all of Helicon's assets under development to be successfully partnered or sold, given the inherent risks involved with developing biotechnologies. However, the company's recent infilling of its portfolio has decreased overall investment risk.

Helicon Group is capitalised at \$14 million and held cash of \$0.9 million at June 30, 2011. Helicon recently raised \$900,000 to support working capital requirements. We expect that further capital raisings will be needed to progress development of assets under management, although licensing activities that are anticipated to take place from 2012 Q4 may diminish this need.

*Bioshares* recommendation: **Speculative Buy Class B**

**Bioshares**

## Prana Biotech – Back in The Game

After a period of quiet imposed in part by financial markets weakness following the GFC, Prana Biotech (PBT: 16 cents) has restated its plans for a small trial of its metal attenuating compound (MPAC) PBT-2 that will evaluate longer term dosing over 52 weeks in patients with Alzheimer's disease (AD). The trial was first announced in March.

A Phase II study of PBT-2 in 78 patients completed in 2007 demonstrated that the compound improved performance of cognition in AD patients. However, the duration of the study was for 12 weeks, which was not sufficient to demonstrate longer term treatment benefits and effects.

The Phase II imaging trial will be conducted to support a licensing partnership. It will enrol 40 patients in Australia with patients diagnosed with early AD. The dosage will be 250 mg, presumably once a day as per the protocol for the first Phase II trial. The trial will measure amyloid plaque using PiB imaging. (PiB refers to Pittsburgh Compound B, a compound that binds to beta-amyloid in the brain.) Measurements will also be made of brain volume (using MRI) cognition and energy utilization.

The company expects to complete the trial and make results available by 2013 Q3.

### New Focus – Huntington's Disease

The company has shifted its emphasis from being a company treating diseases of aging to one that is developing drugs to treat neuro-degenerative diseases and conditions. Prana announced in April a plan to conduct a trial of PBT-2 in patients with Huntington's disease. Huntington's disease is a disease in which levels of copper are elevated in the brain. However, a mutant protein (Huntington or Htt) binds to the copper causing aggregation, similar to the amyloid-beta binding to copper aggregation which occurs in Alzheimer's disease.

PBT-2 (and similar compounds in Prana's drug library) prevent the formation of toxic proteins and aggregates common to Alzheimer's, Huntington's and Parkinson's diseases. The medical paradigm Prana is working to is that PBT-2 is a disease modifying agent, and not a cure for these particular diseases.

Prana plans to commence a six month, 100 patient Phase II trial in patients with Huntington's disease, evaluating safety, cognition, motor, behavioural and psychiatric parameters. The trial would evaluate both a 100mg dose and a 250 mg dose against a placebo. The trial is scheduled to commence in 2011 Q4 with final reporting made by 2013 Q3. Prana believes the completion of a single confirmatory trial would then be required for a new drug submission to the FDA.

The Huntington's program is attractive not only because of the shorter and less expensive clinical pathway but because the disease offers Orphan Drug status. Orphan Drugs benefit from exclusivity periods and favourable treatment during the regulatory phase of development. An Orphan Drug status applies where there are less than 200,000 patients classified as having the disease or condition.

In the US there are 30,000 people with the disease and a 150,000 people with a 50% chance of developing Huntington's disease. There is one drug currently approved, Xenazine (tetrabenazine), to treat HD, which offers limited benefits in treating symptoms of the disease. Of the various therapeutic candidates in development for the treatment of HD, Prana's PBT-2 would appear to be the only candidate capable of improving cognitive function.

### Parkinson's Disease

The company recently received a \$200,000 grant from the Michael J Fox foundation to support the pre-clinical development of PBT-434 in the treatment of Parkinson's disease. Unlike Alzheimer's Disease where there is a more extensive debate on the role of copper in the disease, the role of iron in PD is well understood. So the application of a metal chelating drug such as PBT-434 in therapy is more easily embraced in clinical practise.

### Funding

Prana currently holds funds of approximately \$7 million. It is anticipated that planned clinical trials will cost in the order of \$12-\$15 million to complete.

Prana has issued a prospectus in the US to raise up to US\$50 million using an At-the-Market(ATM) mechanism, which gives Prana more control over the issuance and timing of the share sales.

### Comment

Prana's new strategy to focus on Huntington's disease is sensible given that drug development programs for AD will take much longer. Prana estimates that the candidate from the Huntington's disease program could reach the market four years ahead of an AD drug candidate. Deal terms for licensing PBT-2 for AD are likely to be less favourable as valuable patent time has been lost since the end of the first Phase II in 2007. The company's US patent on PBT-2 expires in 2025. Should Prana license PBT-2 in 2013, a potential partner would take, in our estimates, at least five years to complete two Phase III programs in AD and gain approval, meaning that that drug may reach the market in 2019 at the earliest. The rule of thumb in drug partnering is that pharmaceutical marketing partners aim to licence compounds that offer at least 10 years of patent protection post approval.

### Summary

The move into Huntington's disease for Prana is a commendable move and one that could yield clinical and commercial results in a attractive investment time frame. With the gaining of a small grant from the Michael J Fox foundation, the company also appears to be also making progress in Parkinson's disease. The company appears to have developed a more realistic approach to developing PBT-2, with the application in Huntington's disease having become a lead program over tackling Alzheimer's disease.

Prana Biotech is capitalised at \$43 million.

*Bioshares* recommendation: **Speculative Buy Class B**

**Bioshares**

**Bioshares Model Portfolio (9 September 2011)**

<b>Company</b>	<b>Price (current)</b>	<b>Price added to portfolio</b>	<b>Date added</b>
Genetic Technologies	\$0.22	\$0.18	August 2011
AcruX	\$3.72	\$3.37	June 2011
Psivida	\$4.27	\$3.95	May 2011
Bioniche	\$0.74	\$1.35	March 2011
Somnomed	\$1.19	\$0.94	January 2011
Phylogica	\$0.064	\$0.053	September 2010
Sunshine Heart	\$0.041	\$0.036	June 2010
Biota Holdings	\$0.88	\$1.09	May 2010
Tissue Therapies	\$0.51	\$0.21	January 2010
Atcor Medical	\$0.08	\$0.10	October 2008
Impedimed	\$0.56	\$0.70	August 2008
Bionomics	\$0.50	\$0.42	December 2007
Cogstate	\$0.20	\$0.13	November 2007
Sirtex Medical	\$4.89	\$3.90	October 2007
Clinuvel Pharmaceuticals	\$1.60	\$6.60	September 2007
Pharmaxis	\$0.87	\$3.15	August 2007
Universal Biosensors	\$1.00	\$1.23	June 2007
Alchemia	\$0.43	\$0.67	May 2004

**Portfolio Changes – 9 September 2011****IN:**

No changes

**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. 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, Circadian Technologies, Biota Holdings, Mayne Pharma Group, Impedimed, QRxPharma, Patrys, LBT Innovations, Hexima, Mesoblast, Atcor Medical, Tissue Therapies, Viralytics, Phosphagenics, Immuron, Phylogica, Bluechiip, pSivida, Antisense Therapeutics, Benitec, Allied Healthcare Group

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