

**In this edition...**

It was a dull September quarter for the biotech sector, but perhaps buffered with a sense of pending activity ahead. Only \$15 million was raised, the lowest since we started tracking raisings in 2002. The Bioshares Index was up slightly with only a few stocks posting solid gains.

Biota gained approval for its new flu drug (Inavir) in Japan, Mesoblast completed its merger with Angioblast. However, we are now waiting for three companies to gain approvals of their drugs in the December quarter – Acrux, Alchemia and Pharmaxis. The next quarter is sure to see considerably more activity!

**The Editors**

**Companies Covered: BLT, Quarterly Review**

|                               | 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 - Current)   | -4.1%               |
| <b>Cumulative Gain</b>        | <b>177%</b>         |
| <b>Av Annual Gain (9 yrs)</b> | <b>18.5%</b>        |

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# Bioshares

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

## Quarterly Review

### A Weak Result for the September Quarter

The **Bioshares Index** posted a modest 1.9% increase in the September quarter, unable to make up the 11.9% fall in the previous quarter. In contrast, the benchmark **Nasdaq Biotech Index** rose 11.9% in the September quarter, retracing much of the ground lost through a 14.8% fall in the previous quarter.

The **Bioshares Large Cap Index** dipped by 0.9% in the September quarter, although this stumble was much less than the 6.4% decrease that occurred in the June quarter. The **ASX 300 Index** increased by 6.8% in the September quarter.

Negative factors at play with life science company stock prices include the appreciation of the Australian dollar in major markets for goods sold by Australian firms on the one hand, and for cash-burning biotechs the continuance of a capital drought on the other. Only where companies have a very strong investment proposition, including a proximity to a market entry, and possibly a ranking position in a pre-committed portfolio of specialist investors is there a chance that a high level of capital can be sourced.

A highlight for the quarter was the approval by shareholders of the merger of **Mesoblast** with its associate company, **Angioblast Systems**, creating a company capitalised at \$648 million. Shares in Mesoblast rose 39% for the quarter, closing at \$2.57 on September 30, 2010. The merger addresses long standing suggestions that a single vehicle should exist that holds the IP and products that are based on Mesoblast's proprietary adult stem cell technology. With a capitalisation of greater than \$500 million as an investment criterion, Mesoblast's \$648 million capitalisation raises the attractiveness of the company to potentially a new set of investors looking to take a stake in the company.

Another highlight for the quarter was the receipt by **Biota's** co-development partner **Daiichi Sankyo** of Japanese government approval of the long acting neuraminidase inhibitor, Inavir, for the treatment of influenza infection. We estimate that at a 4% royalty rate, Biota would stand to receive around US\$4.5-US\$7.5 million a year in royalties from sales of Inavir in Japan. Rest of world rights to Inavir have yet to be licensed out.

### Capital Raisings

We calculate a total of \$15 million was raised by ASX-listed biotechs in the September quarter 2010. This is the lowest quarterly figure recorded since we began collating capital

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### Index performances by Quarter

|                           | Q3 2009 | Q4 2010 | Q1 2010 | Q2 2010 | Q3 2010 |
|---------------------------|---------|---------|---------|---------|---------|
| Bioshares Index           | 35.1%   | 7.2%    | -3.7%   | -11.9%  | 1.9%    |
| Nasdaq Biotech Index      | 12.0%   | 0.5%    | 11.3%   | -14.8%  | 11.9%   |
| Bioshares Large Cap Index | 4.2%    | 0.2%    | 9.7%    | -6.4%   | -0.9%   |
| ASX 300 Index             | 20.1%   | 2.7%    | 0.0%    | -11.8%  | 6.8%    |

– Quarterly Review cont'd

raising figures in 2002. The latest figure is 79% down from the previous quarter's figure of \$71 million. Adding in the March quarter raisings of \$90 million, the cumulative total for CY2010 is \$161 million.

Again no IPOs were successfully conducted in the September quarter. However, one was initiated, that of gene-directed enzyme pro-drug technology company, **Broadvector**, which is seeking to raise between \$5 and \$8.5 million.

Among capital raisings initiated or announced included those by **QRxPharma** (which announced a successful \$14 million placement on October 1, to be followed by an SPP), **CBio** (seeking \$9.3 million) and **Sunshine Heart** (seeking up to \$22 million).

The merger of privately-held plant biotechnology company **Farmacule** with ASX-listed **Aquacarotene**, and sale of Aquacarotene's algae-based production assets was concluded in the quarter. Aquacarotene is now included in the Bioshares Index. The very active biotech business figure, Mel Bridges, is the chairman of Aquacarotene. Bridges is also on the boards of **Impedimed**, **Alchemia**, **Benitec**, **Genera Biosystems**, **Tissue Therapies** and also **Campbell Brothers**. The lead application of the Farmacule technology will be to the production of the protein vitronectin. Vitronectin is the key protein used in Tissue Therapy's wound healing product, VitroGro. However, we understand that the Farmacule technology would most likely be applied to the production of vitronectin for research purposes.

Although capital inflows have declined considerably in latest quarter, it is worth noting a converse position, which is that as companies become profitable they build cash reserves which can be retained for business development. By way of example the cash balance of Sirtex Medical at June 30 was \$41.4 million, similarly Cellestis had \$22.6 million, Biota Holdings had \$104.9 million and Acrux had \$58.6 million of cash in the bank.

### Out-Performers

The September quarter saw price gains made by a number of biotechs on the back of positive announcements. On the very last day of the quarter, gene technology company **Benitec** announced that it had been successful in defeating a challenge at the US PTO to a key patent (the 'Graham patent'). The shares closed the quarter at 4 cents, posting a 48% increase from the previous day, with 42 million shares being turned over. However, the gain over the quarter for Benitec shares was 25%. (See further commentary on page 4)

The three strongest movers for the quarter in the Bioshares Index were **Actinogen** (\$0.11) up 307%, **Imugene** (\$0.09) up 165%, and **Ellex Medical Lasers** (\$0.33) up 120%.

Investment interest in **Actinogen** (capitalised at \$4 million), was stimulated by the company's announcement of a discovery it had made concerning a new method to produce anacardic acid in pure form from a class of bacteria known as actinomycetes.

Although **Imugene**'s share price remains 33% below its price a year ago, the stock found support following what appeared to be

end-of-financial year tax loss selling, and also the announcement of the successful completion of a second trial of the company's porcine reproductive and respiratory syndrome (PRRS) virus vaccine.

**Ellex Medical's** share price moved in response to the company's announcement of positive earnings guidance for FY2010, foreshadowing a 13% improvement over the previous corresponding period (excluding impairment charges of \$23 million). Reported earnings of \$3.76 million increased by 16% from the previous year, excluding impairment charges. However, sales declined by 19% for FY2010.

Another strong mover was **Nanosonics**, which saw its share price (\$0.79) increase 49% over the quarter. The increase was associated with the appointment of **GE Healthcare** as distributor for North America of the company's Trophon product, a device used to disinfect ultrasound probes. The company also stated that it held a strong forward order book. Anticipation of a successful FDA 510k approval, expected in the near term, may have also been a factor in the share price increase

**Impedimed**, which is marketing the L-Dex device for aiding in assessment of lymphoedema in women who have had surgery following breast cancer, locked in a convincing 42% gain for the quarter, finishing at \$0.80. During the quarter, Impedimed secured contracts with three US managed care organisations, which collectively manage 13.5 million insured lives.

Wound-treatment company **Tissue Therapies** registered an increase of 31% in its share price for the quarter. This increase was associated with the release of further data from a trial of its Vitrogro product in 30 patients in Perth, reporting that 5 of 30 patients achieved complete wound healing in 24 days.

**Acrux's** share price rose by 32%, as the company moved closer to the objective of having its male testosterone product Axiron approved by the FDA, an event we suggest has a likelihood of occurring in late November this year.

Complementary medicines outfit **Blackmore's**, one company without a US dollar exposure on its earnings, saw its share price increase 27% over the September quarter. The company recorded a 17% in net profit after tax in FY2010 to \$24.3 million.

### Under-Performers

A majority of companies (63 out of 111) recorded a fall in their share prices over the September quarter 2010.

**CBio**, which is developing Xtoll as a therapy for rheumatoid arthritis, saw its share price fall 83% to \$0.175. CBio listed at a \$1.00 in February 2010, raising \$7 million, after originally seeking a maximum of \$30 million in its first prospectus and a minimum of \$13 million. The company recently announced a rights issue, seeking to raise \$9.3 million.

**Pharmaust** recorded a 79% decrease in its share price for the quarter. In the first half of 2010, the company undertook a capital rais-

– Cont'd on page 4

**Capital Raisings by Australian-listed Biotech Companies Q3 2010**

| Company                        | Investment Manager or Investor                   | Type of raising                           | Funds raised (\$M) |
|--------------------------------|--|---|--------------------|
| Cordlife                       |  | Rights Issue                              | \$6.00             |
| Eastland Medical               | Paterson Securities                              | Placement                                 | \$2.28             |
| Prima Biomed                   | Springtree Spec. Opp. Fund                       | Conv. Loan Funding (T12,T13,T14)          | \$2.10             |
| Immuron                        |  | Placement                                 | \$0.75             |
| Immuron                        |  | SPP                                       | \$0.69             |
| Biodiem                        |  | Rights Issue (Shortfall Placement)        | \$1.00             |
| Patrys                         | Advance Opportunities Fund                       | 2% Equity Linked Redeemable Structured CN | \$0.50             |
| Helicon Group                  | Cunningham Peterson Sharbanee Securities Pty Ltd | Rights Issue                              | \$0.46             |
| CBio                           | Springtree Spec. Opp. Fund                       | Conv. Loan Funding (T3,T4,T5)             | \$0.45             |
| Neuren Pharm.                  | Springtree Spec. Opp. Fund                       | Conv. Loan Funding (T3,T4,T5)             | \$0.30             |
| Healthlinx                     | Springtree Spec. Opp. Fund                       | Conv. Loan Funding (T10,T11)              | \$0.18             |
| CBio                           |  | Convertible Note                          | \$0.15             |
| Neurodiscovery                 | Cunningham Peterson Sharbanee Securities Pty Ltd | Rights Issue                              | \$0.29             |
| <b>Total raised in Q3 2010</b> |  |   | <b>\$15.1</b>      |
| <b>Total raised in Q2 2010</b> |  |   | <b>\$71.1</b>      |
| <b>Total raised in Q1 2010</b> |  |   | <b>\$90.0</b>      |
| <b>Total - 2010</b>            |  |   | <b>\$161.2</b>     |

**Selected Clinical Trial Developments - Sept Quarter 2010**

| Company                  | Code | Product/Therapeutic                     | Event   |
|--------------------------|------|---|---|
| CBio                     | CBZ  | Xtoll (rheumatoid arthritis)            | Completed recruitment in Phase II trial.  |
| QRxPharma                | QRX  | MoxDuo IV (pain)                        | Announced results of Phase II 40 pt comparative POS study of MoxDuo delivered intravenously. SPID scores were 10% higher in study group compared to morphine alone.             |
| Sirtex Medical           | SRX  | SirSpheres (kidney cancer)              | Commenced trial in 24 kidney cancer patients.   |
| Tissue Therapies         | TIS  | VitroGro (wound healing)                | Interim results, Perth study - of 30 pts, 16.7% complete healing within 24 days; ave reduction in size was 49%  |
| Biota                    | BTA  | BTA798 (rhinovirus infection)           | Commenced Phase II trial in 400 pts with chronic asthma experiencing rhinovirus infection   |
| Clinuvel Pharmaceuticals | CUV  | Scenesse (afamelonitide) (EPP)          | Announced results from Phase III trial in erythropoietic protoporphyria (EPP). Although results were statistically significant, certain actual figures were not made available. |
| Immuron                  | IMC  | Imm122-1/Imm124-E (Fatty liver disease) | Reported results from 20 pt trial. Improved liver function reported, as well as improved insulin function.  |
| Living Cell Technologies | LCT  | DiaBCell                                | Received approval to include more pts in NZ trial (currently 8 enrolled)  |
| Starpharma               | SPL  | Vivagel (bacterial vaginosis)           | Commenced Phase II study  |

**Bioshares Model Portfolio (1 Oct 2010)**

| Company                  | Price (current) | Price added to portfolio | Date added     |
|--------------------------|-----------------|--------------------------|----------------|
| Phylogica                | \$0.049         | \$0.053                  | September 2010 |
| Sunshine Heart           | \$0.030         | \$0.036                  | June 2010      |
| Biota Holdings           | \$0.98          | \$1.09                   | May 2010       |
| Tissue Therapies         | \$0.23          | \$0.21                   | January 2010   |
| QRxPharma                | \$0.93          | \$0.25                   | December 2008  |
| Hexima                   | \$0.29          | \$0.60                   | October 2008   |
| Atcor Medical            | \$0.12          | \$0.10                   | October 2008   |
| Impedimed                | \$0.77          | \$0.70                   | August 2008    |
| Mesoblast                | \$2.55          | \$1.25                   | August 2008    |
| Circadian Technologies   | \$0.56          | \$1.03                   | February 2008  |
| Patrys                   | \$0.08          | \$0.50                   | December 2007  |
| Bionomics                | \$0.28          | \$0.42                   | December 2007  |
| Cogstate                 | \$0.26          | \$0.13                   | November 2007  |
| Sirtex Medical           | \$4.80          | \$3.90                   | October 2007   |
| Clinuvel Pharmaceuticals | \$0.20          | \$0.66                   | September 2007 |
| Starpharma Holdings      | \$0.56          | \$0.37                   | August 2007    |
| Pharmaxis                | \$2.15          | \$3.15                   | August 2007    |
| Universal Biosensors     | \$1.40          | \$1.23                   | June 2007      |
| AcruX                    | \$2.40          | \$0.83                   | November 2004  |
| Alchemia                 | \$0.49          | \$0.67                   | May 2004       |

**Portfolio Changes – 1 October**

**IN:**  
No changes.

**OUT:**  
No changes.

– Quarterly Review cont'd

ing and then took a 10% stake in an oil and gas project. However, operations on the well were suspended in September.

On September 17, Fluorotechnics announced it would sell some if not all of its assets, effectively winding up its proteomics research tools business. Shares in Fluorotechnics fell 68% in the quarter and were down 91% from a year ago. Three rights issues, raising \$4.6 million since it listed in October of 2008 (when it raised \$8 million), have been insufficient to support the company through difficult trading conditions.

**Probiotec's** share price has been weakening throughout 2010, however, the release of full year results which showed a 14% decrease in sales, contributing to a 27% drop in its share price for the September quarter.

Biotech investment group **Biotech Capital** announced plans to wind up itself as a listed investment vehicle during the quarter. Biotech Capital had accumulated losses of \$23.6 million at June 30, 2010. Biotech Capital shares fell by 51% in the three months ending September 30, 2010, to close the quarter at \$0.089. The investment firm announced the payment of a 2 cent dividend on 31 August 2010 and declared a net tangible asset backing of 21.4 cents per share for the same date.

**Bioshares****Benitec – Scores Second Major Advance for 2010**

Benitec (BLT: 3.6 cents) has received a favourable decision relating to its core US patent, referred to as the '099 Graham patent. All previous rejections to the patent have now been reversed. It is expected a new patent will be re-issued to Benitec shortly to reflect the recent decision.

While this patent has been granted in other regions with no claim rejections, the US patent position had been unclear. Benitec has now cleared two major commercial obstacles this year: in January it reached a settlement with the CSIRO to renegotiate on more favourable commercial terms an agreement between the two groups over rights to the ddRNAi technology; and it has now had its core patent uncertainties cleared in the US.

Both of these developments will place Benitec in a better position to license use of the technology to other biotech and pharmaceutical companies, will position it better to partner out existing programs, and should place the company in a better position to attract funding. The patent decision also clears the way for an acquisition of the company.

The '099 Graham patent expires in 2018, which provides only eight years of protection excluding patent extensions. Benitec has had two other patents granted in the US in the last three months which take out protection to at least 2026 and the company has 12 families of patents including filed and approved.

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

**Bioshares**

**The Australian Listed Life Sciences Sector**  
**September 30, 2010: Capitalisation \$34.9 billion, 111 companies**

**Bioshares Large Cap. Index**

| Company                     | Code | Cap. \$m | Principal Activities   | Change - Quarter | Change - Year | Price 30/09/10 |
|-----------------------------|------|----------|--|------------------|---------------|----------------|
| CSL                         | CSL  | 18,114   | Manufactures pharmaceutical products including vaccines and human plasma fractions | 1%               | -1%           | \$33.05        |
| Resmed Inc.                 | RMD  | 5,125    | Manufactures diagnostic and treatment equipment for sleeping disordered breathing  | -7%              | 30%           | \$3.38         |
| Cochlear                    | COH  | 3,974    | Manufactures cochlear hearing implants   | -5%              | 5%            | \$70.25        |
| Sigma Pharmaceuticals       | SIP  | 566      | Pharmaceutical manufacturing and wholesaling                                       | 14%              | -55%          | \$0.48         |
| <b>Capitalisation Total</b> |      | 27,778   |  |                  |               |                |

**Bioshares Index**

| Company                 | Code | Cap. \$m | Principal Activities  | Change - Quarter | Change - Year | Price 30/09/10 |
|-------------------------|------|----------|---|------------------|---------------|----------------|
| Heartware International | HIN  | 1,014    | Developing a mechanical heart pump (LVAD)   | -16%             | 118%          | \$2.09         |
| Mesoblast               | MSB  | 648      | Developing therapies based on mesenchymal pre-cursor stem cells, with applications in cartilage regrowth and heart and bone repair.                     | 39%              | 150%          | \$2.57         |
| Pharmaxis               | PXS  | 490      | Marketing a lung function test, Aridol, and developing the Bronchitol product to treat cystic fibrosis, bronchiectasis and COPD.                        | 5%               | -10%          | \$2.17         |
| Blackmores              | BKL  | 471      | Manufactures vitamin, mineral and herbal supplements and skin & hair products in Australia and N.Z.   | 27%              | 39%           | \$28.26        |
| AcruX                   | ACR  | 390      | A Pooled Dev. Fund commercialising a drug delivery technology that uses sunscreen penetration enhancers to aid transdermal drug delivery                | 32%              | 40%           | \$2.39         |
| Unilife Corporation     | UNS  | 335      | Developer of retractable syringes   | -7%              | -25%          | \$1.04         |
| Sirtex Medical          | SRX  | 273      | The company's core technology uses radioactive particles to irradiate tumours in the liver. Approved for use in most major regions.                     | 0%               | 1%            | \$4.89         |
| API                     | API  | 254      | Pharmaceutical wholesaler   | 33%              | -39%          | \$0.52         |
| Universal Biosensors    | UBI  | 228      | Development, manufacture and commercialisation of a range of in vitro diagnostic tests for point-of-care use  | -6%              | 8%            | \$1.45         |
| Cellestis               | CST  | 226      | Marketing a diagnostic for latent tuberculosis  | -15%             | -30%          | \$2.35         |
| Nanosonics              | NAN  | 179      | Developing a novel disinfection technology, the first product is a point of care ultrasound probe disinfection unit                                     | 49%              | 61%           | \$0.79         |
| Biota                   | BTA  | 172      | Developer of anti-infective drugs, including the flu drug Relenza. Inavir, developed with Daiichi Sankyo, a long acting flu drug now approved in Japan. | -6%              | -65%          | \$0.96         |
| Starpharma Holdings     | SPL  | 134      | Developer of pharmaceutical applications of chemical scaffolds known as 'dendrimers'.   | 4%               | -2%           | \$0.56         |

## Bioshares Index

| Company                   | Code | Cap. \$m | Principal Activities  | Change - Quarter | Change - Year | Price 30/09/10 |
|---------------------------|------|----------|---|------------------|---------------|----------------|
| Impedimed                 | IPD  | 109      | Develops devices that aid the diagnosis of secondary lymphoedema, muscle wasting and other disorders  | 42%              | 21%           | \$0.80         |
| QRxPharma                 | QRX  | 102      | Developing a 'dual opioid' drug to treat moderate to severe pain.   | -15%             | 9%            | \$1.00         |
| Scigen                    | SIE  | 97       | Developer and manufacturer of biopharmaceuticals. Company is based in Singapore and was spun out of Sonic Healthcare in 2002.                   | -42%             | 46%           | \$0.18         |
| ChemGenex Pharmaceuticals | CXS  | 96       | Developer of the drug Omacetaxine, which has potential to treat CML patients that develop the T315i mutation.                                   | 15%              | -54%          | \$0.34         |
| Alchemia                  | ACL  | 93       | Commercialising new solid phase carbohydrate synthesis technology. First product, a synthetic heparin, to be launched by Dr Reddy's in 2009/10  | -6%              | -15%          | \$0.49         |
| pSiVida                   | PVA  | 91       | Developing drug delivery technologies, with a special focus on ophthalmic applications  | 40%              | -1%           | \$4.90         |
| Halcygen Pharm.           | HGN  | 88       | Developing an improved dosing anti-fungal drug, Subazole and operating manufacturing services   | 5%               | 31%           | \$0.59         |
| Bionomics                 | BNO  | 88       | Developing drugs to treat cancer and CNS diseases, and has also developed a gene diagnostic for epilepsy.                                       | 2%               | 2%            | \$0.28         |
| Prima Biomed              | PRR  | 73       | Developing the CVac immunotherapy.  | -5%              | -43%          | \$0.10         |
| Ascent PharmaHealth       | APH  | 72       | A generic pharmaceutical manufacturer and distributor. <b>Strides ArcoLabs intends to buy out minority shareholders.</b>                        | 7%               | 23%           | \$0.29         |
| Phosphagenics             | POH  | 69       | Commercialising a drug delivery technology improving the delivery of vitamin E and existing pharmaceutical products through phosphorylation.    | -7%              | -3%           | \$0.09         |
| Clinuvel Pharmaceuticals  | CUV  | 62       | Developing an analogue of the alpha-MSH protein, named Scenesse, as a photo-protective agent  | -9%              | -39%          | \$0.21         |
| Clovercorp                | CLV  | 57       | Development and production of omega-3 food additives from tuna oil.   | 23%              | 73%           | \$0.35         |
| Probiotec                 | PBP  | 50       | Manufacturer, marketer and distributor of a range of over the counter (OTC) pharmaceuticals, complementary medicines and speciality ingredients | -27%             | -62%          | \$0.95         |
| Living Cell Technologies  | LCT  | 50       | Developing cell therapies for diabetes, haemophilia and Huntington's disease  | -19%             | -26%          | \$0.18         |
| Solagran                  | SLA  | 45       | Developing complementary medical compounds called Bioeffectives.  | 20%              | -3%           | \$0.15         |
| Cordlife                  | CBB  | 42       | Rolling out tissue banking services in Australia and Asia   | -11%             | -19%          | \$0.33         |
| CathRx                    | CXD  | 39       | Developing novel modular cardiac catheters for the diagnosis and treatment of abnormal heart rhythms  | 4%               | -31%          | \$0.28         |

## Bioshares Index

| Company                      | Code | Cap. \$m | Principal Activities  | Change - Quarter | Change - Year | Price 30/09/10 |
|------------------------------|------|----------|---|------------------|---------------|----------------|
| Somnomed                     | SOM  | 37       | Commercialising an oral device for the treatment of sleep apnea and snoring.  | 18%              | 57%           | \$0.94         |
| Tissue Therapies             | TIS  | 32       | Developing the VitroGro product for ulcer and wound healing   | 31%              | 15%           | \$0.24         |
| Prana Biotechnology          | PBT  | 30       | Developing drugs to treat CNS diseases such as Alzheimer's and Parkinson's  | -19%             | -47%          | \$0.13         |
| OBJ                          | OBJ  | 29       | Developing transdermal drug delivery technologies   | 18%              | 550%          | \$0.03         |
| Anteo Diagnostics            | ADO  | 29       | Developer of a biological coatings technology that can be applied to immunoassays, bio-separations, drug delivery and other medical devices         | -6%              | 467%          | \$0.05         |
| Ellex Medical Lasers         | ELX  | 28       | Develops, manufactures and markets solid state ophthalmic lasers used to treat secondary cataracts and retinal disorders.                           | 120%             | 83%           | \$0.33         |
| Genera Biosystems            | GBI  | 28       | Develops, manufactures and distributes advanced molecular diagnostic tests, with a particular focus on women's health.                              | -2%              | -45%          | \$0.44         |
| Immuron                      | IMC  | 26       | Specialises in R&D of hyper-immune bovine colostrum products for therapeutic use in animals and humans.   | 22%              | 17%           | \$0.08         |
| Avexa                        | AVX  | 26       | Programs suspended. Direction of company being debated by shareholders.   | -6%              | -73%          | \$0.03         |
| Circadian Technologies       | CIR  | 26       | Developing drugs, including antibodies, around the VEGF C and VEGF D targets  | 12%              | -28%          | \$0.56         |
| Institute of Drug Technology | IDT  | 26       | Manufacturer of pharmaceutical ingredients to international standards for major pharmaceutical groups.  | -3%              | -66%          | \$0.60         |
| Southern Dental Industries   | SDI  | 24       | Manufacture & distribution of amalgam (fillings) & other dental materials and product R&D.  | 11%              | -20%          | \$0.20         |
| Compumedics                  | CMP  | 23       | Develops, manufactures and markets sleep diagnostic and monitoring equipment.   | 8%               | -24%          | \$0.14         |
| Agenix                       | AGX  | 22       | Reinstated 10-9-2010. Developing a compound to treat Hepatitis B, AGX1009. Also seeking a partner in China to develop Thrombview, an imaging agent. | -6%              | 94%           | \$0.03         |
| Hexima                       | HXL  | 21       | Research and development of genetic technologies that can enhance the resistance of crops to insects and fungal pathogens.                          | 20%              | -52%          | \$0.27         |
| Progen Pharmaceuticals       | PGL  | 21       | A developer of cancer therapeutics  | -13%             | -42%          | \$0.35         |
| Eastland Medical Systems     | EMS  | 20       | Developing the anti-malarial product ArTiMist.  | 32%              | -31%          | \$0.05         |
| Brain Resource Corp          | BRC  | 19       | Development and commercialisation of functional brain analysis techniques   | -2%              | -22%          | \$0.21         |

## Bioshares Index

| Company                                | Code | Cap. \$m | Principal Activities   | Change - Quarter | Change - Year | Price 30/09/10 |
|--|------|----------|--|------------------|---------------|----------------|
| Benitec                                | BLT  | 18       | R&D company focusing on gene silencing, specifically DNA delivered RNAi, technology  | 25%              | -13%          | \$0.04         |
| Viralytics                             | VLA  | 18       | Developing a cancer treatment based on the application of viruses (oncolytic virus technology)   | -11%             | 10%           | \$0.03         |
| Cogstate                               | CGS  | 17       | Marketing cognitive performance diagnostic products  | 4%               | 6%            | \$0.26         |
| Sunshine Heart                         | SHC  | 16       | Developing the C-Pulse heart assist device. The C-Pulse wraps around and compresses the aorta, increasing blood flow through the body.   | -19%             | -36%          | \$0.03         |
| Patrys                                 | PAB  | 14       | Developing human antibody therapies for the treatment of lung, pancreatic, gastric and colon cancers                                     | -25%             | -46%          | \$0.08         |
| Biodiem                                | BDM  | 14       | Focused on the development of LAIV influenza vaccines  | 27%              | -20%          | \$0.14         |
| NuSep                                  | NSP  | 14       | Manufacture and sale of protein separations technologies   | 17%              | 41%           | \$0.24         |
| USCOM                                  | UCM  | 13       | Marketing a non-invasive heart output function monitor   | -9%              | -60%          | \$0.32         |
| Medical Developments                   | MVP  | 13       | Commercialising the Penthrax inhaler for temporary pain relief. Used widely in ambulances across Australia.                              | 21%              | 63%           | \$0.26         |
| Advanced Surgical Design & Manufacture | AMT  | 13       | A developer and manufacturer of prosthetic implants and medical devices  | -14%             | -8%           | \$0.37         |
| Imugene                                | IMU  | 13       | Developing animal products such as antibiotic alternatives used in the stock feed industry using a vaccine and gene therapy approach     | 165%             | -33%          | \$0.09         |
| Novogen                                | NRT  | 13       | Developing analogues of naturally occurring phenolic hormones to treat cancers and other conditions.                                     | -24%             | -83%          | \$0.13         |
| Healthlinx                             | HTX  | 12       | Detecting novel functions of known and new protein and peptides for therapeutic purposes.  | -21%             | -6%           | \$0.08         |
| Atcor Medical                          | ACG  | 12       | Markets the SphygmoCor device, a noninvasive technology that provides information regarding the functioning of the cardiovascular system | 4%               | -29%          | \$0.12         |
| Phylogica                              | PYC  | 12       | Developing peptide compound libraries for use in human therapeutics.   | -27%             | -49%          | \$0.05         |
| Austofix                               | AYX  | 12       | Manufacturer and developer of orthopaedic fixation devices   | -5%              | 12%           | \$0.95         |
| Cbio                                   | CBZ  | 12       | Drug development company, focus is on Xtoll product for rheumatoid arthritis   | -83%             | 0%            | \$0.18         |
| Stirling Products                      | STI  | 11       | Development of a drug inhalation platform and involved in telemedicine   | 50%              | 0%            | \$0.01         |



## Bioshares Index

| Company                | Code | Cap. \$m | Principal Activities   | Change - Quarter | Change - Year | Price 30/09/10 |
|------------------------|------|----------|--|------------------|---------------|----------------|
| Cyclopharm             | CYC  | 11       | A nuclear medicine company that markets the Technegas lung imaging system  | -14%             | -12%          | \$0.07         |
| Avita Medical          | AVH  | 11       | Markets ReCell, a skin repair product  | -13%             | -41%          | \$0.10         |
| Genetic Technologies   | GTG  | 11       | Provides DNA paternity testing services and holds broad patents relating to the use of non-coding DNA.   | -26%             | -53%          | \$0.03         |
| Vita Life Sciences     | VSC  | 10       | Development, manufacture and distribution of prescription and OTC medicines as well as complementary and alternative medicines, dietary supplements and health foods | -17%             | 6%            | \$0.19         |
| Analytica              | ALT  | 9        | A medical devices company that has developed a retractable syringe   | -15%             | 0%            | \$0.02         |
| KarmelSonix            | KSX  | 9        | Respiratory and pulmonary devices company  | -28%             | -78%          | \$0.01         |
| LBT Innovations        | LBT  | 9        | Developed the MicroStreak technology for the automation of microbiology laboratory processing  | 35%              | -41%          | \$0.09         |
| Calzada                | CZD  | 8        | Holds a 100 % stake in PolyNovo, a polymer chemistry company.  | -4%              | -25%          | \$0.02         |
| Antisense Therapeutics | ANP  | 8        | Developing antisense compounds to treat multiple sclerosis and acromegaly  | 8%               | -72%          | \$0.01         |
| Biotron                | BIT  | 8        | Developing a compound to treat HCV   | -3%              | -54%          | \$0.06         |
| Tyrian Diagnostics     | TDX  | 7        | Developer of diagnostic products, including the ReadRite-Alpha Amylase test ( a wheat quality test)  | 56%              | -39%          | \$0.01         |
| Neuren Pharmaceuticals | NEU  | 7        | Developing neuroprotective therapeutics  | -15%             | -53%          | \$0.02         |
| ITL                    | ITD  | 7        | Develops and distributes medical devices such as safety equipment to prevent needle stick injuries and sterile preparation kits.                                     | -12%             | -35%          | \$0.05         |
| Cellmid                | CDY  | 7        | Developing therapies that target the midkine protein   | 5%               | -26%          | \$0.02         |
| Bone Medical           | BNE  | 6        | Developing treatments for bone and joint degenerative diseases such as arthritis and osteoporosis.   | -39%             | -68%          | \$0.06         |
| Resonance Health       | RHT  | 6        | Marketing the FerriScan technology, a non-invasive tool for measuring liver iron levels  | -6%              | 7%            | \$0.02         |
| Optiscan Imaging       | OIL  | 6        | Manufacture of confocal microscopes for clinical diagnosis   | -15%             | -60%          | \$0.04         |
| BioProspect            | BPO  | 6        | Developing insecticides from naturally occurring molecules   | -23%             | -57%          | \$0.01         |

## Bioshares Index

| Company                              | Code | Cap. \$m | Principal Activities  | Change - Quarter | Change - Year | Price 30/09/10 |
|--------------------------------------|------|----------|---|------------------|---------------|----------------|
| Acquacarotene                        | AQL  | 6        | Merged with <b>Farmacule BioIndustries</b> (11-8-2010), a plant genetic technologies business; divested algae farm assets. 1:20- reconstruction 9-6-2010. | 20%              |               | \$0.18         |
| Virax Holdings                       | VHL  | 5        | Developing a therapeutic and prophylactic vaccine for HIV   | -55%             | -58%          | \$0.03         |
| Holista Colltech                     | HCT  | 5        | Has developed a novel technology for the extraction of collagen from sheepskins   | -13%             | -35%          | \$0.10         |
| IM Medical                           | IMI  | 5        | Markets the Intelliheart Cardiovascular Diagnostic System   | 0%               | -75%          | \$0.00         |
| Medigard                             | MGZ  | 5        | Developed retractable syringe technology and other safety medical products.   | -58%             | -57%          | \$0.05         |
| Cryosite                             | CTE  | 5        | Provides specialised storage services, especially for umbilical cord blood  | -17%             | 11%           | \$0.10         |
| Actinogen                            | ACW  | 4        | Early stage developer of antibiotics that show activity against MRSA and VRE bacteria   | 307%             | 57%           | \$0.11         |
| PharmAust                            | PAA  | 4        | Operates Epichem and PharmAust, which provide products and services to biotech and pharma companies. Holds oil and gas investments.                       | -79%             | -53%          | \$0.02         |
| Probiomics                           | PCC  | 3        | Proprietary ownership of a unique probiotic strain  | -9%              | -17%          | \$0.01         |
| BioMD                                | BOD  | 3        | Developing a tissue engineering technology, termed ADAPT  | -13%             | -64%          | \$0.02         |
| NeuroDiscovery                       | NDL  | 3        | Focusing on pain drug development following pending management buyout of electrophysiology business   | -17%             | -27%          | \$0.03         |
| Acuvax                               | ACU  | 2        | Holds interests in various therapeutics and vaccines  | -25%             | -87%          | \$0.00         |
| Atos Wellness                        | ATW  | 2        | Manages wellness centres in Singapore, Malaysia, India, Australia, Austria and Germany. <b>Suspended from quotation.</b>                                  | -33%             | 0%            | \$0.01         |
| Giaconda                             | GIA  | 2        | Developed novel (patented) combinations of registered drugs for the treatment of gastrointestinal disorders.  | -7%              | -80%          | \$0.03         |
| Helicon Group                        | HCG  | 2        | Exploiting niche market opportunities for medical products in China and other Asian markets.  | -7%              | -83%          | \$0.01         |
| Fluorotechnics                       | FLS  | 2        | Development and sale of scientific equipment and consumables, including fluorescent stains  | -68%             | -91%          | \$0.04         |
| Select Vaccines                      | SLT  | 1        | <b>Vaccine assets sold and is seeking new business</b>  | 0%               | 0%            | \$0.004        |
| Genesis Research & Development Corp. | GEN  | 1        | <b>Operations suspended</b>   | -8%              | -62%          | \$0.02         |

## Bioshares Index

| Company                     | Code | Cap. \$m     | Principal Activities                  | Change - Quarter | Change - Year | Price 30/09/10 |
|-----------------------------|------|--------------|---------------------------------------|------------------|---------------|----------------|
| Teleso Technologies         | TEO  | 1            | Investigating new business activities | -17%             | -75%          | \$0.01         |
| <b>Capitalisation Total</b> |      | <b>7,058</b> |                                       |                  |               |                |

## Listed Biotech Investment Funds or Companies

| Company                                   | Code | Cap. \$m      | Principal Activities   | Change - Quarter | Change - Year | Price 30/09/10 |
|---|------|---------------|--|------------------|---------------|----------------|
| BPH Corporate                             | BPH  | 44            | Formerly Biopharmica. Managing cancer treatment and detection and bacterial DNA diagnostic projects. Portfolio investment approach.                                | 121%             | 0%            | \$0.15         |
| Biotech Capital                           | BTC  | 7             | A Pooled Development Fund investing in unlisted Australian biotech companies and in public biotechs, including Alchemia, Starpharma, Neurodiscovery and Phylogica. | -51%             | -63%          | \$0.09         |
| Xceed Capital                             | XCD  | 2             | Owns 100% of Boron Molecular, a chemistry services company.  | 20%              | -54%          | \$0.01         |
| <b>Capitalisation Total</b>               |      | <b>53</b>     |  |                  |               |                |
| <b>Capitalisation Total - All Indexes</b> |      | <b>34,890</b> |  |                  |               |                |

**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**

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