

In this edition...

The biotech sector in Australia has made solid progress in recent months, notwithstanding instances of commercial failure with some companies. Valuations as dictated by the market would appear to be at the lowest levels seen for quite some time. The small-to-medium cap biotech sector is now worth 50% less than what it was in December 2004.

Funding will remain a serious concern as long as market sentiment towards small cap stocks is weak. However, the main investment point is that for investors with cash, there are many excellent biotech bargains on offer at the moment, with our preference to those with in excess of 18 months funding.

The editors

Companies covered: 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 (from 4 May '07) | -37% |
| Cumulative Gain | 97.0% |
| Av Annual Gain (6 yrs) | 26.8% |

Bioshares is published by Blake Industry & Market Analysis Pty Ltd. The company also provides market and company analysis of the Australian pharmaceutical and biotech industries for local and international funds management institutions, venture capital funds and other related industry groups. For further details contact David Blake (see details below).

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Bioshares

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

Quarterly Review

Positive Sector Progress At Odds With Wider Market Chaos and Disaster

The chaotic and dysfunctional equity markets have well and truly had a disastrous effect on the biotech sector, with small-to-medium Australian listed life science companies falling by 30% overall. This follows on from calendar year 2007, when this part of the sector (the majority) fell by 14%. The Biotech Large Cap index has fared reasonably well, falling only 7% this year. This is largely due to **CSL** which was a steady performer, increasing by 2% for the quarter.

The more than 40% fall in the Australian small to mid cap biotech companies over the last 15 months does not reflect the underlying progress that has been made. There are now 15 companies that are profitable in the sector (see table on following page) with 26 companies generating revenues in excess of \$1 million from products in Australia. Recent additions to the list of now profitable businesses are **Cellestis** and **Cryosite**, which will both be worth watching.

These 26 companies generated a total revenue of \$4.4 billion, recording a net profit of \$581 million for the first half of this financial year. **Arana Therapeutics**, which operates on a financial year period ending in September, generated revenue of \$171 million for its full financial year in 2007, delivering a net profit of \$133 million. The company received royalty and licensing revenue of just under \$25 million for the year (up 16% on the previous corresponding period) and a \$133 windfall from the exit of its investment in domain antibody company **Domantis**, sold to **GlaxoSmithKline** last year.

Biota Holdings and **Sirtex Medical** have also become profitable biotech businesses with a strong outlook forecast for those companies and are building investor interest. Looking forward, **Advance Surgical Design and Manufacture (ASDM)** which listed on the ASX late last year is also expected to move to profitability over the course of the year together with cognitive testing group **Cogstate**. And **Acrux** will start to receive a royalty stream this year from sales for **Evamist**, which are expected to begin this month.

New drugs approaching market

Aside from the growing list of profitable companies in the sector, there is expected to be a record number of Australian biotechs expected to file their drug candidates for regulatory approval by the end of 2009 (see table on page 3). In total, eight companies are expected to file drugs for approval over this period.

The leading mid-cap biotech company in Australia, **Pharmaxis**, is expected to seek approval for **Bronchitol** in Australia in the second half of this year for the treatment of bronchiectasis. It will take around one year for the drug to progress through the TGA approval process, with the next challenge being to receive PBS certification for government reimbursement. We expect the company will file for approval in Europe in the first half of 2009 for the treatment of cystic fibrosis.

Cont'd over

Results released this week from a small independent investigator-sponsored cystic fibrosis trial in the UK showed that Bronchitol improved lung function by 7%, the same as the existing treatment Pulmozyme, marketed by **Genentech**. Pulmozyme currently generates approximately US\$300 million in sales a year. Bronchitol is delivered in seconds through a portable inhalation device and has an advantage over Pulmozyme which requires delivery through a nebulizer followed by percussion of the lungs.

ChemGenex Pharmaceuticals this week reported further information from its ongoing Phase II/III trial of its drug omacetaxine for the treatment of chronic myeloid leukemia. The treatment is showing to be suitable and very effective for treating patients who have failed first line treatment with the successful drug Gleevec (**Novartis**) and have are positive for the T315i mutation.

The trial has enrolled 34 patients and 25 of those have been evaluated. In those patients the drug has shown to generate a complete hematologic response (CHR) in 60% of patients with chronic disease i.e. removing the cancer from the blood stream. In 20% of patients the drug has even been effective in removing or reducing levels of the cancer from the bone marrow, from where the cancer originates.

Results to date are impressive. The company anticipates filing its drug for approval with the FDA in a rolling NDA submission this year and we expect to see the drug approved for sale in the US, 2009 if all goes well.

ChemGenex is also conducting a trial with omacetaxine as a third line therapy for patients with CML who have failed two types of tyrosine kinase inhibitor (TKI) treatment. ChemGenex also recently announced it would test the drug in patients with acute myeloid leukemia.

Almost \$1 billion was raised by Australian biotechs last year. Approximately 10 companies are now sufficiently well funded to complete the clinical development of their drug candidates. There are a number of medical device companies, including **CathRx** and **Universal Biosensors**, that are expected to see their products come onto the market in the next 12 months. The volatile and uncertain equity markets is not expected to affect the programs of the larger and better funded life science companies in the sector. However, if the unstable market conditions continue for the remainder of the year, then a number of the small-to-medium sized biotechs, especially those with less than 12 months cash at hand, may be approaching precarious commercial positions.

Australian Life Science Companies - Half Year Revenue & Profit Summary

| Company | Sales H12008 (\$M) | Sales H12007 (\$M) | Change on pcp | Profit/loss (\$M) |
|------------------------|--------------------|--------------------|---------------|-------------------|
| CSL | \$1,750.1 | \$1,514.3 | 16% | \$348.7 |
| Arana Therapeutics* | \$80.4 | \$10.6 | 658% | \$66.7 |
| Cochlear | \$298.0 | \$276.0 | 8% | \$57.1 |
| Resmed** | \$432.0 | \$380.0 | 14% | \$56.7 |
| Sigma | \$1,533.0 | - | 10% | \$46.8 |
| Blackmores | \$90.9 | \$85.0 | 7% | \$17.6 |
| Biota Holdings | \$28.0 | \$20.3 | 38% | \$5.5 |
| IDT Australia | \$14.3 | \$12.4 | 16% | \$2.8 |
| Compumedics | \$20.1 | \$19.7 | 2% | \$1.6 |
| Geneparm Australasia | \$32.2 | \$25.1 | 28% | \$1.3 |
| Ellex Medical Lasers | \$25.3 | \$21.2 | 19% | \$1.2 |
| Sirtex Medical | \$19.6 | \$14.7 | 33% | \$1.1 |
| Cryosite | \$3.8 | \$2.3 | 66% | \$0.4 |
| Cellestis | \$7.9 | \$5.1 | 57% | \$0.3 |
| ASDM | \$2.7 | \$2.3 | 15% | -\$0.3 |
| Genetic Technologies | \$8.8 | \$3.5 | 149% | -\$0.5 |
| Brain Resource Company | \$2.1 | \$1.1 | 85% | -\$0.5 |
| Cogstate | \$1.6 | \$1.2 | 38% | -\$0.6 |
| SDI | \$21.8 | \$21.8 | 0% | -\$0.6 |
| NeuroDiscovery | \$1.0 | \$0.9 | 17% | -\$1.7 |
| Atcor Medical | \$3.1 | \$2.6 | 17% | -\$1.7 |
| Optiscan Imaging | \$2.7 | \$5.5 | -51% | -\$2.0 |
| Cordlife | \$4.2 | \$2.4 | 77% | -\$2.3 |
| Portland Orthopaedics | \$2.9 | \$2.5 | 16% | -\$5.9 |
| Ventracor | \$6.2 | \$1.2 | 435% | -\$15.0 |
| Total | \$4,393 | | Total | \$577 |

* Figures are half of annual result for FY2007 (Period ending 30/9/07)

** Converted at AUD/USD=0.9

Capital raisings & IPOs

The flow of capital into the Australian biotech sector dried up in the March quarter 2008, with a total \$41.5 million in funds raised. In contrast more than \$200 million was raised in the December quarter 2007. There was a single IPO completed in the quarter, despite a strong handful of companies ready and waiting for the right market conditions.

The sole IPO was **Austofix** (AYX: \$1.40) an orthopedic device manufacturer based in Adelaide. Austofix listed on March raising \$3 million at 1.50 per share. The company is currently capitalised at \$16 million.

Australian developed drugs expected to be filed for approval by end of 2009

| Company | Indication | Name | Expected filing date | Region of filing |
|---------------------------|----------------------------|------------------------|----------------------|------------------|
| Alchemia | Anticoagulant | Fondaparinux (generic) | 1H 2008 | US |
| Chemgenex Pharmaceuticals | CML | Omacetaxine | 2H 2008 | US |
| Pharmaxis | Bronchiectasis | Bronchitol | 2H 2008 | Australia |
| | Cystic Fibrosis | Bronchitol | 1H 2009 | Europe |
| Clinuvel Pharmaceuticals | EPP (sun allergy disorder) | CUV1647 | Mid 2009 | Europe |
| QRxPharma | Acute pain | Q8003IR | 2H 2009 | US |
| Acrux | Hypogonadism | Testosterone MD-Lotion | 2H 2009 | US |
| Peplin | AK topical treatment | PEP005 | 2H 2009 | US |
| Halcygen | Antifungal | Subazole | 2H 2009 | US |

Capital Raisings by Australian-listed Biotech Companies Q1 2008

| Company | Investment manager/Investor | Type of raising | Funds raised (\$M) |
|----------------------------------|-----------------------------|---------------------------|--------------------|
| Neuren Pharmaceuticals | Taylor Collison | Right Issue (U/W \$7.1 M) | \$7.10 |
| Proteome Systems | Foster Stockbroking | Placement | \$6.50 |
| Agenix | | Placement | \$5.00 |
| Telesso Technologies | | Convertible Note | \$4.00 |
| Biolayer | Trans Ocean Securities | Right Issue (U/W) | \$3.20 |
| Viralytics | | Placement + SPP | \$3.20 |
| Stirling Products | | Placement | \$2.14 |
| Virax Holdings | | Convertible Note | \$1.88 |
| RiTract | | Placement | \$1.79 |
| Imugene | | Rights Issue | \$1.83 |
| Avantogen | | Placement | \$1.00 |
| Atos Wellness | | Placement | \$0.50 |
| Colltech | | Placement | \$0.40 |
| Total | | | \$38.54 |
| IPOs | | | \$3.00 |
| Overall raised in Q1 2008 | | | \$41.54 |

Property Notice – Melbourne



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Clinical Trial Developments - March Quarter 2008

| Company | Code | Product/Therapeutic | Event |
|--------------------------|------|-----------------------------------|--|
| AcruX | ACR | Fentanyl MDTs | Completed Phase I trial in 14 pts; single dose |
| Arana Therapeutics | AAH | ART621 | Commenced 40-60 pt Phase II psoriasis trial (3 dose levels; s.c.) |
| Avexa | AVX | Apricitabine (ATC) | Announced 48 week data from Phase II trial |
| Bionomics | BNO | BNC105 | Commenced Phase I trial in patients with advanced cancer |
| Biota | BTA | LANI (CS8958) | Completed enrollment in Phase II study (Japan) |
| ChemGenex | CXS | Omacetaxine | Commenced 27 pt Phase II in AML pts that have failed chemotherapy |
| Eastland Medical Systems | EMS | ArTiMist (sub-lingual artemether) | Completed multi-dose Phase I study of anti-malarial treatment for infants and children |
| Cytopia | CYT | CYT997 | Commenced Phase II study of CYT997 in up to 24 multiple myeloma patients |
| Giaconda | GIA | Myoconda | Completed 24 pt formulation Pilot Safety Study - MAP infection in Crohn's disease |
| Living Cell Technologies | LCT | DiabeCell | Reported 6 month interim results; Phase I/IIa trial in 4 pts |
| KarmelSonix | KSX | WIMM-PC/WIMM-CC | Ethics approval received for six studies of wheeze detection and cough counting technologies |
| Mesoblast | MSB | Autologous MPC Stem Cell Therapy | Reported 6 month data for autologous stem cell therapy in 10 pts with non-healing long bone fractures |
| NuSep | NSP | SpermSep CS10 | Completed Phase I trial with nine women |
| Novogen | NRT | GLYC-101 | Completed enrolment in Phase IIa wound healing trial |
| Progen Pharmaceuticals | PGL | PI-88 | Commenced Phase III study in 600 pts of PI-88 as adjuvant treatment for primary liver cancer |
| Prana Biotechnology | PBT | PBT2 | Reported results of Phase II trial in 78 pts |
| Phosphagenics | PSD | TMP/Insulin | Received ethics approval for Phase II trial |
| pSivida | PSD | Brachysil | Reported results of Phase IIa trial in x pts with advanced inoperable pancreatic cancer |
| Starpharma | SPL | Vivagel | Completion of enrollment and follow-up completed in Herpes study |
| Starpharma | SPL | Vivagel | Expansion of trial in sexually active HIV negative women from 40 to 60 pts to include universal placebo |
| Sirtex Medical | SRX | SIR-Spheres | Received FDA approval for trial of SIR-Spheres and Avastin and chemotherapy as first-line therapy in unresectable metastatic colorectal cancer |
| Tissue Therapies | TIS | VitroGro | Received approval for diabetic and venous ulcers trial in Toronto |
| Viralytics | VLA | Cavatak | Commenced Phase I dose escalating trial in late stage prostate cancer, breast cancer and melanoma |

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Freehills

Patent & Trade Mark Attorneys

Bioshares Model Portfolio (4 April 2008)

| Company | Price (current) | Price added to portfolio | Date added |
|--------------------------|-----------------|--------------------------|----------------|
| IDT | \$2.20 | \$1.90 | March 2008 |
| Circadian Technologies | \$1.02 | \$1.03 | February 2008 |
| Patrys | \$0.30 | \$0.50 | December 2007 |
| NeuroDiscovery | \$0.14 | \$0.16 | December 2007 |
| Bionomics | \$0.35 | \$0.42 | December 2007 |
| Cogstate | \$0.13 | \$0.13 | November 2007 |
| Sirtex Medical | \$3.18 | \$3.90 | October 2007 |
| Clinuvel Pharmaceuticals | \$0.42 | \$0.66 | September 2007 |
| Starpharma Holdings | \$0.29 | \$0.37 | August 2007 |
| Pharmaxis | \$2.49 | \$3.15 | August 2007 |
| Universal Biosensors | \$0.90 | \$1.23 | June 2007 |
| Biota Holdings | \$1.18 | \$1.55 | March 2007 |
| Probiotec | \$1.20 | \$1.12 | February 2007 |
| Peplin Inc | \$0.50 | \$0.83 | January 2007 |
| Arana Therapeutics | \$0.97 | \$1.31 | October 2006 |
| Chemgenex Pharma. | \$0.85 | \$0.38 | June 2006 |
| Cytopia | \$0.28 | \$0.46 | June 2005 |
| Optiscan Imaging | \$0.26 | \$0.35 | March 2005 |
| Acrux | \$0.85 | \$0.83 | November 2004 |
| Alchemia | \$0.46 | \$0.67 | May 2004 |

Portfolio Changes – 4 April 2008

IN:

No changes.

OUT:

Ventracor has around one year's cash with a current spend of \$30 million a year. In current equity markets, topping up that funding may come at a price. The company's chairman, John Massey, announced he was standing aside this week. It's a peculiar decision given he has been a long standing champion of the program from the beginning and the proximity of commercial success.

The Australian Listed Life Sciences Sector

March 31, 2008: Capitalisation \$33.7 billion, 131 Companies

Bioshares Large Cap. Index

| Company | Code | Cap. \$m | Principal Activities | Change - Quarter | Change - Year | Price 31/3/08 |
|-----------------------|------|----------|---|------------------|---------------|---------------|
| CSL | CSL | 20,312 | Manufactures pharmaceutical products including vaccines and human plasma fractions. | 2% | 34% | \$36.91 |
| Resmed Inc. | RMD | 3,360 | Manufactures diagnostic and treatment equipment for sleeping disordered breathing. | -24% | -28% | \$4.52 |
| Cochlear | COH | 3,043 | Manufactures cochlear hearing implants. | -27% | -15% | \$54.70 |
| Sigma Pharmaceuticals | SIP | 1,077 | Pharmaceutical manufacturing and wholesaling. | -22% | -50% | \$1.25 |

Capitalisation Total 27,792

Bioshares Index

| Company | Code | Cap. \$m | Principal Activities | Change - Quarter | Change - Year | Price 31/3/08 |
|---------------------------|------|----------|--|------------------|---------------|---------------|
| Pharmaxis | PXS | 407 | Marketing a lung function test, Aridol, and developing the Bronchitol product to treat cystic fibrosis, bronchiectasis and COPD. | -50% | -35% | \$2.09 |
| API | API | 385 | Pharmaceutical wholesaler. | -18% | -29% | \$1.50 |
| Blackmores | BKL | 296 | Manufactures vitamin, mineral and herbal supplements and skin & hair products in Australia and N.Z. | -15% | -16% | \$18.39 |
| Biota | BTA | 221 | Commercialised Relenza anti-flu drug and flu diagnostic kits. Now developing an improved version. | -2% | -22% | \$1.21 |
| Cellestis | CST | 217 | Marketing a diagnostic for latent tuberculosis. | -27% | -39% | \$2.26 |
| Arana Therapeutics | AAH | 214 | Developing biologic therapeutic products for the treatment cancer and inflammatory diseases | -21% | -51% | \$0.91 |
| Sirtex Medical | SRX | 184 | The company's core technology uses radioactive particles to irradiate tumours in the liver. Approved for use in most major regions. | -27% | -4% | \$3.30 |
| Acrux | ACR | 154 | A Pooled Dev. Fund commercialising a drug delivery technology that uses sunscreen penetration enhancers to aid transdermal drug delivery. | -31% | -29% | \$0.97 |
| ChemGenex Pharmaceuticals | CXS | 150 | Developer of the drug Omacetaxine, which has potential to treat CML patients that develop the T315i mutation. | -24% | 1% | \$0.80 |
| Solagran | SLA | 143 | Developing complementary medical compounds called Bioeffectives. | -33% | 8% | \$0.79 |
| Universal Biosensors | UBI | 141 | Development, manufacture and commercialisation of a range of in vitro diagnostic tests for point-of-care use. | -39% | -24% | \$0.90 |
| Avexa | AVX | 140 | Developing antiviral therapies for HIV and Hepatitis B and a novel antibiotic. | -36% | -53% | \$0.35 |
| Phosphagenics | POH | 118 | Commercialising a drug delivery technology improving the delivery of vitamin E and existing pharmaceutical products through phosphorylation. | -19% | -30% | \$0.20 |
| Peplin | PLI | 114 | Developing a plant derived compound, PEP005, to treat non-melanocytic skin cancers and other systemic cancers such as leukemia. | -38% | -29% | \$0.55 |
| Fermiscan Holdings | FER | 113 | Commercialising the use of x-ray diffraction to aid in the screening of breast cancer. | -23% | -63% | \$0.79 |
| Clinuvel Pharmaceuticals | CUV | 112 | Developing an analogue of the alpha-MSH protein as a photo-protective agent. | 7% | -70% | \$0.37 |

Bioshares Index

| Company | Code | Cap. \$m | Principal Activities | Change - Quarter | Change - Year | Price 31/3/08 |
|------------------------------|------|----------|---|------------------|---------------|---------------|
| Ventracor | VCR | 106 | Developer of the VentrAssist device, an artificial heart assist device (LVAD). | -43% | -63% | \$0.34 |
| Heartware | HTW | 99 | Developing a mechanical heart pump (LVAD) | -27% | -45% | \$0.40 |
| Novogen | NRT | 98 | Developing analogues of naturally occurring phenolic hormones to treat cancers and other conditions. | -19% | -59% | \$1.00 |
| Progen Pharmaceuticals | PGL | 91 | Developing oncology therapeutics, including the anti-angiogenesis compound, PI-88. | -40% | -79% | \$1.52 |
| Prana Biotechnology | PBT | 85 | Developing drugs to treat CNS diseases such as Alzheimer's and Parkinson's. | -8% | 33% | \$0.47 |
| Institute of Drug Technology | IDT | 84 | Manufacturer of pharmaceutical ingredients to international standards for major pharmaceutical groups. | -21% | 0% | \$1.95 |
| Bionomics | BNO | 82 | Developing drugs to treat cancer and CNS diseases, and has also developed a gene diagnostic for epilepsy. | -17% | 30% | \$0.35 |
| QRxPharma | QRX | 82 | Developing a 'dual opioid' drug to treat moderate to severe pain. | -2% | 0% | \$1.09 |
| CathRx | CXD | 78 | Developing novel modular cardiac catheters for the diagnosis and treatment of abnormal heart rhythms | -31% | -17% | \$1.83 |
| Living Cell Technologies | LCT | 74 | Developing cell therapies for diabetes, haemophilia and Huntington's disease. | -15% | 94% | \$0.31 |
| Alchemia | ACL | 69 | Commercialising new solid phase carbohydrate synthesis technology. First product, a synthetic heparin, to be launched by partners in 2008. | -39% | -56% | \$0.43 |
| Mesoblast | MSB | 68 | Developing therapies based adult stem cells called mesenchymal stem cells, with applications in cartilage regrowth and bone repair. | -55% | -73% | \$0.57 |
| Nanosonics | NAN | 67 | Developing a novel disinfection technology | -40% | 0% | \$0.35 |
| Impedimed | IPD | 58 | Develops devices that aid the diagnosis of secondary lymphoedema, muscle wasting and other disorders | -9% | 0% | \$0.72 |
| Starpharma Holdings | SPL | 58 | Developer of pharmaceutical applications of chemical scaffolds known as 'dendrimers'. | -19% | -27% | \$0.32 |
| Patrys | PAB | 57 | Developing human antibody therapies for the treatment of lung, pancreatic, gastric and colon cancers | -22% | 0% | \$0.37 |
| pSiVida | PSD | 55 | Developing and marketing drug delivery technologies, with a special focus on ophthalmic applications. | -17% | -72% | \$0.08 |
| Probiotec | PBP | 54 | Manufacturer, marketer and distributor of a range of over the counter (OTC) pharmaceuticals, complementary medicines and speciality ingredients | -15% | 9% | \$1.16 |
| GenePharm Australasia | GAA | 51 | An generic pharmaceutical manufacturer and distributor. | 3% | -45% | \$0.37 |
| Scigen | SIE | 49 | Developer and manufacturer of biopharmaceuticals. Company is based in Singapore and was spun out of Sonic Healthcare in 2002. | -3% | -6% | \$0.09 |
| Agenix | AGX | 49 | Has acquired drug development business in China. Also developing Thrombview, a blood clot diagnostic imaging agent. | -32% | 10% | \$0.12 |
| Unilife Medical Solutions | UNI | 49 | Developer of retractable syringes. | -29% | -14% | \$0.25 |

Bioshares Index

| Company | Code | Cap. \$m | Principal Activities | Change - Quarter | Change - Year | Price 31/3/08 |
|---------------------------------------|------|----------|--|------------------|---------------|---------------|
| Cordlife | CBB | 46 | Rolling out tissue banking services in Australia and Asia | -23% | 39% | \$0.50 |
| Hexima | HXL | 45 | Research and development of genetic technologies that can enhance the resistance of crops to insects and fungal pathogens. | -45% | 0% | \$0.60 |
| Benitec | BLT | 41 | R&D company focusing on gene silencing, specifically DNA delivered RNAi, technology. | -3% | -33% | \$0.14 |
| Ellex Medical Lasers | ELX | 40 | Develops, manufactures and markets solid state ophthalmic lasers used to treat secondary cataracts and retinal disorders. | -29% | -32% | \$0.58 |
| Genetic Technologies | GTG | 38 | Provides DNA paternity testing services and holds broad patents relating to the use of non-coding DNA. | -30% | -30% | \$0.11 |
| Brain Resource Corp | BRC | 32 | Development and commercialisation of functional brain analysis techniques. | -22% | 6% | \$0.35 |
| Southern Dental Industries | SDI | 32 | Manufacture & distribution of amalgam (fillings) & other dental materials and product R&D. | -38% | -70% | \$0.27 |
| KarmelSonix | KSX | 32 | Respiratory and pulmonary devices company. Acquired technologies from PulmoSonix and Karmel Medical Acoustics Technologies. | -29% | 400% | \$0.13 |
| Proteome Systems | PXL | 31 | Discovery and development of diagnostic and therapeutic products. | -32% | -44% | \$0.14 |
| Antisense Therapeutics | ANP | 30 | Developing antisense compounds to treat multiple sclerosis and acromegaly. | 36% | 36% | \$0.06 |
| Optiscan Imaging | OIL | 27 | Manufacture of confocal microscopes for clinical diagnosis including endoscopes through alliance with Pentax. | -20% | -46% | \$0.26 |
| Cytopia | CYT | 26 | Small molecule drug development company. | -43% | -57% | \$0.30 |
| Eastland Medical Systems | EMS | 25 | Developing retractable syringes and other surgical products. | -22% | 27% | \$0.14 |
| Polartechinics | PLT | 24 | Develops and commercialises medical instruments to diagnose pre-cancer and cancer, in particular cervical cancer and melanomas. | -74% | -72% | \$0.10 |
| Clovercorp | CLV | 24 | Development and production of omega-3 food additives from tuna oil. | -12% | 32% | \$0.15 |
| Cyclopharm | CYC | 23 | A nuclear medicine company that markets the Technegas lung imaging system | -30% | -51% | \$0.17 |
| Advanced Surgical Desig & Manufacture | AMT | 22 | A developer and manufacturer of prosthetic implants and medical devices | -35% | 0% | \$0.60 |
| Giaconda | GIA | 22 | Developed novel (patented) combinations of registered drugs for the treatment of gastrointestinal disorders. | -21% | -39% | \$0.30 |
| Neuren Pharmaceuticals | NEU | 22 | Developing neuroprotective therapeutics | -44% | -80% | \$0.10 |
| Bone Medical | BNE | 22 | Developing treatments for bone and joint degenerative diseases such as arthritis and osteoporosis. | -38% | -47% | \$0.24 |
| IM Medical | IMI | 22 | Markets the Intelliheart Cardiovascular Diagnostic System | -40% | 20% | \$0.018 |
| Sunshine Heart | SHC | 21 | Developing the C-Pulse heart assist device. The C-Pulse wraps around and compresses the aorta, increasing blood flow through the body. | -33% | -44% | \$0.10 |

Bioshares Index

| Company | Code | Cap. \$m | Principal Activities | Change - Quarter | Change - Year | Price 31/3/08 |
|------------------------------------|------|----------|---|------------------|---------------|---------------|
| Compumedics | CMP | 21 | Develops, manufactures and markets sleep diagnostic and monitoring equipment. | -3% | 3% | \$0.15 |
| Halcygen | HGN | 20 | Developing an improved dosing anti-fungal drug, Subazole, based on drug delivery technology developed by Mayne Pharma | -39% | | \$0.26 |
| Labtech Systems | LBT | 19 | Developing the MicroStreak technology for the automation of microbiology laboratory processing | -10% | -27% | \$0.19 |
| Occupational & Medical Innovations | OMI | 18 | Developing safety devices used in the healthcare industry, including safety syringes. | -20% | -15% | \$0.44 |
| Austofix* | AYX | 16 | Manufacturere and developer of orthopeadic fixation devices | 47% | N.A | \$1.40 |
| ITL | ITD | 15 | Develops and distributes medical devices such as safety equipment to prevent needle stick injuries and sterile preparation kits. | -48% | -78% | \$0.12 |
| Viralytics | VLA | 15 | Developing a cancer treatment based on the application of viruses (oncolytic virus technology). | -38% | -48% | \$0.05 |
| BioProspect | BPO | 15 | Developing insecticides from naturally occurring molecules | -27% | -6% | \$0.03 |
| Phylogica | PYC | 14 | Developing phylomer (protein fragment shapes) compound libraries for use in human therapeutics. | -46% | -74% | \$0.10 |
| Biotron | BIT | 14 | Developing anti-viral therapies and cancer screening technologies. | -22% | -52% | \$0.14 |
| Medical Developments | MVP | 14 | Commercialising the Penthrax inhaler for temporary pain relief. Used widely in ambulances across Australia. | -40% | -58% | \$0.25 |
| Avantogen | ACU | 14 | A developer of various cancer therapeutics. | -59% | -51% | \$0.03 |
| Somnomed | SOM | 14 | Commercialising an oral device for the treatment of sleep apnea and snoring. | -10% | -28% | \$0.02 |
| Imugene | IMU | 14 | Developing animal products such as antibiotic alternatives used in the stock feed industry using a vaccine and gene therapy approach | -37% | -63% | \$0.10 |
| Biosignal | BOS | 13 | Developing compounds that interrupt the colonisation of bacteria. Applications in the oil and gas industry and with contact lenses are being studied. | -29% | -4% | \$0.13 |
| Life Therapeutics | LFE | 13 | A US based company operating a plasma collection business and marketing diagnostic tests for blood-borne diseases and blood-clotting disorders. | -64% | -92% | \$0.11 |
| RiTract | RTL | 12 | Currently suspended from trading. Re-capitalisation proposed. | 0% | -53% | \$0.04 |
| Advanced Ocular Systems | AOS | 11 | Plans to spin-off eye-care assets into a listed Singapore company; generates royalty income from ophthalmic products | -32% | -72% | \$0.02 |
| Stem Cell Sciences | STC | 11 | Contract research and development and sale of re-agents for use in stem cell therapy research | -48% | 0% | \$0.32 |
| Portland Orthopaedics | PLD | 10 | Developer, manufacturer and marketer of surgical hip and knee implants | -53% | -81% | \$0.07 |
| USCOM | UCM | 10 | Marketing a non-invasive heart output function monitor. | -4% | -53% | \$0.25 |
| Stirling Products | STI | 9 | Commercialising a production animal growth promotant and meat finisher. | 4% | -36% | \$0.05 |

Bioshares Index

| Company | Code | Cap. \$m | Principal Activities | Change - Quarter | Change - Year | Price 31/3/08 |
|---------------------------|------|----------|---|------------------|---------------|---------------|
| Metabolic Pharmaceuticals | MBP | 9 | Developing a drug delivery technology. | -27% | -79% | \$0.03 |
| Rockeby Biomed | RBY | 9 | Research, development and marketing of rapid testing technologies for infectious diseases in animals and humans. | -21% | -46% | \$0.02 |
| Solbec Pharmaceuticals | SBP | 9 | Developing plant-based compounds for the treatment of melanomas and asbestos related lung cancers. | -11% | -28% | \$0.03 |
| Biodiem | BDM | 9 | Focused on the development of LAIV influenza vaccines | -41% | -67% | \$0.12 |
| Telesso Technologies | TEO | 9 | Undertaking a strategic review of investment opportunities | -40% | -34% | \$0.15 |
| Vita Life Sciences | VSC | 9 | Development, manufacture and distribution of prescription and OTC medicines as well as complementary and alternative medicines, dietary supplements and health foods. | 25% | 0% | \$0.18 |
| Chemeq | CMQ | 8 | Currently suspended from trading. Under administration. | 0% | 11% | \$0.08 |
| Medic Vision | MVH | 8 | Marketing training software and hardware for surgeons (formerly Premier Bionics) | -39% | -51% | \$0.09 |
| Avastra Sleep Centres | AVS | 8 | Consolidating sleep disorder testing centres in the USA | -84% | -89% | \$0.07 |
| Apollo Life Sciences | AOP | 8 | Currently suspended from trading. Under self-imposed administration and wind-up. | -78% | -90% | \$0.04 |
| BioMD | BOD | 7 | Developing a tissue engineering technology, termed ADAPT | -15% | -29% | \$0.09 |
| Clinical Cell Culture | CCE | 7 | Development of skin treatment products for use in burns and other skin damage. Lead product is CellSpray. | -48% | -75% | \$0.01 |
| NeuroDiscovery | NDL | 7 | Provides electrophysiology services to biotech and pharma, and is developing range of compounds for treating neuropathic pain. | 0% | -43% | \$0.12 |
| Norwood Abbey | NAL | 7 | Developing needle-free and micro needle drug delivery technologies | -43% | -78% | \$0.02 |
| Healthlinx | HTX | 7 | Detecting novel functions of known and new protein and peptides for therapeutic purposes. | -11% | -1% | \$0.09 |
| Atcor Medical | ACG | 7 | Markets the SphygmoCor device, a noninvasive technology that provides information regarding the functioning of the cardiovascular system | -29% | -64% | \$0.07 |
| Anadis | ANX | 6 | Specialises in R&D of bovine colostrum products for therapeutic use in animals and humans. | -40% | -73% | \$0.06 |
| Virax Holdings | VHL | 6 | Bio-pharmaceutical R&D company developing a therapeutic and prophylactic vaccine for HIV. | -40% | -67% | \$0.05 |
| Dia-B Tech | DIA | 6 | Developing therapeutics and diagnostics in the area of diabetes. | -29% | -69% | \$0.04 |
| Medical Therapies | MTY | 6 | Developing therapies to treat inflammatory diseases, using copper- and zinc- indomethacin. Currently suspended from trading. | -17% | -59% | \$0.08 |
| Helicon Group | HCG | 5 | Exploiting niche market opportunities for medical products in China and other Asian markets. | -8% | | \$0.07 |
| Actinogen | ACW | 5 | Early stage developer of antibiotics that show activity against MRSA and VRE bacteria | -43% | 0% | \$0.14 |

Bioshares Index

| Company | Code | Cap. \$m | Principal Activities | Change - Quarter | Change - Year | Price 31/3/08 |
|--------------------------------------|------|----------|---|------------------|---------------|---------------|
| Cryosite | CTE | 5 | Building a business in the provision of services for storing umbilical cord blood through cryopreservation and ultracold technologies. | -36% | -30% | \$0.12 |
| Cogstate | CGS | 5 | Marketing cognitive performance diagnostic products. | -23% | -44% | \$0.10 |
| Medigard | MGZ | 5 | Developed retractable syringe technology and other safety medical products. | -25% | -21% | \$0.08 |
| Select Vaccines | SLT | 5 | Development and commercialisation of infectious diseases diagnostics, vaccines and therapeutics for hepatitis-related diseases | -28% | -33% | \$0.02 |
| Prima Biomed | PRR | 4 | Developing the CVac immunotherapy. | -29% | -68% | \$0.02 |
| Colltech | CAU | 4 | Has developed a novel technology for the extraction of collagen from sheepskins. | -32% | -69% | \$0.02 |
| Biopharmica | BPH | 4 | Managing cancer treatment and detection and bacterial DNA diagnostic projects. Portfolio investment approach. | -23% | -46% | \$0.06 |
| Tissue Therapies | TIS | 4 | Commercialising growth factors for spray-on skin product, other wound healing and in research and industrial cell growth applications. | -60% | -75% | \$0.14 |
| Resonance Health | RHT | 4 | Marketing the FerriScan technology, a non-invasive tool for measuring liver iron levels | -20% | -43% | \$0.01 |
| Ambri | ABI | 4 | Business under review, with the company's technology recently out-licensed to a private firm. | -21% | -53% | \$0.02 |
| Analytica | ALT | 4 | A medical devices company that has developed a retractable syringe | -6% | -40% | \$0.02 |
| Medec | MAA | 4 | Healthcare services and equipment, including treatment tables, and complementary medicines | -42% | -83% | \$0.03 |
| Brainz | BZI | 4 | Develops non-invasive brain monitors for the detection of brain injury designed for use at the patient's bedside. A NZ company. | -63% | -84% | \$0.07 |
| Probiomics | PCC | 4 | Intending to acquire Minomic International, a diagnostics company | -50% | -59% | \$0.02 |
| PharmAust | PAA | 3 | Operates Epicem and PharmAust Manufacturing, which provide products and services to biotech and pharma companies | -55% | -83% | \$0.02 |
| Incitive | ICV | 3 | Development of compounds to treat cancers and auto-immune diseases. | -25% | -25% | \$0.06 |
| Genesis Research & Development Corp. | GEN | 3 | Developing RNAi based therapeutics. Interests in agricultural biotechnologies. | -54% | -63% | \$0.09 |
| NuSep | NSP | 3 | Manufacture and sale of protein separations technologies | -33% | 0% | \$0.12 |
| Narhex Life Sciences | NLS | 3 | Developed a low cost protease inhibitor for treatment of HIV in Chinese market. | -60% | -74% | \$0.02 |
| Biolayer | BLS | 2 | Developer of a biological coatings technology that can applied to immunoassays, bio-separations, drug delivery and other medical devices. | -27% | -70% | \$0.03 |

Capitalisation Total 5,862

* change in share price is from close of first day of listing

Listed Biotech Investment Funds

| Company | Code | Cap. \$m | Principal Activities | Change - Quarter | Change - Year | Price 31/3/08 |
|--------------------|------|----------|--|------------------|---------------|---------------|
| Circadian | CIR | 41 | Management and funding of R&D projects with Australian and NZ universities. Holds investments in Optiscan, Metabolic Pharmaceuticals, Antisense Therapeutics, Avexa and Vegenics. | -16% | -27% | \$1.02 |
| Biotech Capital | BTC | 18 | A Pooled Development Fund investing in unlisted Australian biotech companies or in public biotechs, including Starpharma, Clinical Cell Culture, Phylogica and Stem Cell Sciences. | -33% | -48% | \$0.21 |
| Xceed Capital | XCD | 9 | Holds a 64% stake in Polynovo, which is developing biodegradable polyurethane-based polymers. Also operates Boron Molecular, a chemistry services company. | -45% | -47% | \$0.09 |
| Genesis Biomedical | GBL | 4 | Venture capital company funding a sepsis project at UWA; increasing its exposure to mining activities | -29% | -48% | \$0.02 |

Capitalisation Total 68

Capitalisation Total - All Indexes 33,722

How Bioshares Rates Stocks

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

Group A

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

- Buy** CMP is 20% < Fair Value
- Accumulate** CMP is 10% < Fair Value
- Hold** Value = CMP
- Lighten** CMP is 10% > Fair Value
- Sell** CMP is 20% > Fair Value
(CMP–Current Market Price)

Group B

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

Speculative Buy – Class A

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

Speculative Buy – Class B

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

Speculative Buy – Class C

These stocks generally have one product in development and lack many external validation features.

Speculative Hold – Class A or B or C

Sell

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

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