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# Bioshares

4 April 2014  
Edition 546

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

## Quarterly Review

### Bioshares Index Steady in March Quarter

#### 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)      | 70.6%               |
| Year 4 (May '04 - May '05)      | -16.3%              |
| Year 5 (May '05 - May '06)      | 77.8%               |
| Year 6 (May '06 - May '07)      | 17.4%               |
| Year 7 (May '07 - May '08)      | -36%                |
| Year 8 (May '08 - May '09)      | -7.4%               |
| Year 9 (May '09 - May '10)      | 50.2%               |
| Year 10 (May '10 - May '11)     | 45.4%               |
| Year 11 (May '11 - May '12)     | -18.0%              |
| Year 12 (May '12 - May '13)     | 3.1%                |
| Year 13 (May '13 - Current)     | 48.7%               |
| <b>Cumulative Gain</b>          | <b>430%</b>         |
| <b>Av. annual gain (13 yrs)</b> | <b>19.0%</b>        |

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The **Bioshares Index** held steady in the March quarter 2014, with a 0.5% gain masking strong gains made by stocks such as Progen Pharmaceuticals (up 346%), Benitec Biopharma (up 118%) and USCOM (up 114%), offsetting falls by Reva Medical (down 69%), Scigen (down 55%), Isona (down 40%), Bluechiip (down 35%), Acrux (down 33%) and Bionomics (down 30%).

It should be noted that the Bioshares Index figure for March 31, 2014 is based on Prana Biotech's price from when it was in a trading halt on March 31 of \$1.04. The following day its price closed down 73.5% to \$0.275, following the release of Phase II trial results which showed that its metal chelating compound PBT2 did not reach its primary endpoint in the trial.

Bionomics' shares fell because it missed its primary endpoint in a Phase II renal cancer study. Reva Medical announced that it would end development of its ReZolve bioresorbable stent scaffold and focus on a new stent design. Acrux's share price has been hit by concerns that the testosterone market will be more stringently controlled once the FDA completes a review of the cardiovascular related risks of testosterone therapy. The review stems from claims made in two retrospective studies that testosterone increases the risk of cardiovascular events. Retrospective studies, however, are not relied upon generally in setting therapeutic recommendations because of the many ways in which the data can be biased and skewed. As a consequence of what may be seen as an over-reaction, Acrux has emerged as a very attractive buying proposition.

An easing in the **Nasdaq Biotech Index** is now at work, with growth slowing to 4.2% for the quarter, compared to 8.3% for the previous quarter and well down from 16.7% increased recorded for the same quarter a year ago.

The **Bioshares Large Cap Index** registered a 1.8% decline for the quarter, its first decline after nine solid quarters of growth. CSL held steady with a 1% increase for the quarter, while Cochlear dipped 3% and Resmed fell 10%. Shares in Sigma Pharmaceuticals rose 2% in the March quarter.

Of note for the March quarter was the performance of three recent IPOs, with December quarter IPOs Dorsavi and Innate Immunotherapeutics up 29% and 28% respectively from

#### Index Performance by Quarter

Cont'd over

|                           | Q1 2013 | Q2 2013 | Q3 2014 | Q4 2013 | Q1 2014 |
|---------------------------|---------|---------|---------|---------|---------|
| Bioshares Index           | -0.1%   | -3.0%   | 17.4%   | 1.6%    | 0.5%    |
| Nasdaq Biotech Index      | 16.7%   | 8.6%    | 20.7%   | 8.3%    | 4.2%    |
| Bioshares Large Cap Index | 6.9%    | 4.4%    | 4.3%    | 4.4%    | -1.8%   |
| ASX 300 Index             | 6.7%    | -3.6%   | 8.7%    | 2.5%    | 0.2%    |

their closing prices at the end of 2014. Simavita, which listed during the March quarter, was up 95% from its offer price.

### Capital Raisings

As mentioned, a sole IPO took place during the March quarter, that of Simavita, which is also listed on the Toronto Stock Exchange. Simavita merged with GTec International Resources, which was formerly a 100% owned Canadian subsidiary of Genetic Technologies. Through its Australian prospectus, Simavita raised \$1.1 million, following earlier rounds from which it raised a gross \$13.8 million.

A total of \$98 million was raised in the March Quarter, including the \$1.1 million by Simavita. This figure is 40% less than \$158 million raised in the December quarter, 2013.

However, two capital raisings stood out: Viralytics raised \$27 million to further development of CAVATAK, an oncolytic virotherapy; and Benitec received \$15.75 million from its \$31 million raising, with the balance (\$15.75 million) to follow approval at a shareholder's meeting later this month. The Benitec placement was conducted at \$1.07 a share, with the stock closing the quarter at \$1.62.

The feature common to both raisings was the introduction of specialist life science investors, including numbers of well known North American life science investors, to the respective share registers. With the registers of both companies essentially containing no life science institutional investors prior, the pronounced change in register composition marks out both capital raisings as transformational.

### Leading Companies Reported Strong Sales Growth

A number of companies have reported very strong growth in sales in the December or March quarters. This week Sirtex Medical announced that unit sales had increased by 18% in the March quarter over the previous corresponding period, led by sales in the US which were up 25.8%. Somnomed announced a sales increase of 41% in the December quarter (March results have not been released), which was assisted by a lower Australian dollar. Unit sales of the company's Somnodent oral appliances were up 23.4% for the quarter over the previous corresponding period. Nanosonics reported a sales increase of 119% for the December half, up to \$9.7 million.

In contrast, sales of Pharmaxis's Bronchitol product for the treatment of cystic fibrosis in Europe and Australia have been disappointing, after six quarters of sales.

### Positive Clinical and Regulatory News

Positive clinical news during the quarter included Mesoblast's reporting of Phase II data from a 100 patient study with its allogeneic stem cells for the treatment of intervertebral disc repair. Mesoblast now intends to move into Phase III studies with the program, after having raised \$170 million last year for this purpose and other product opportunities.

The news wasn't all bad for Prana, which announced some encouraging data from its Phase II Huntington's disease trial with PBT2 and plans to conduct further trials in that indication.

Benitec Biopharma announced it had received approval from the FDA to commence its Phase I/II trial in patients with HCV and that it has also commenced screening patients for the trial.

Biotron announced antiviral activity at six months in eight patients with HIV Genotype 3 infection, from its Phase II trial of BIT225.

Starpharma revealed that its Vivagel-coated condom product gaining regulatory approval in Japan.

### Outlook

#### Positive Clinical and Commercial Outcomes Required Over Next 6 months

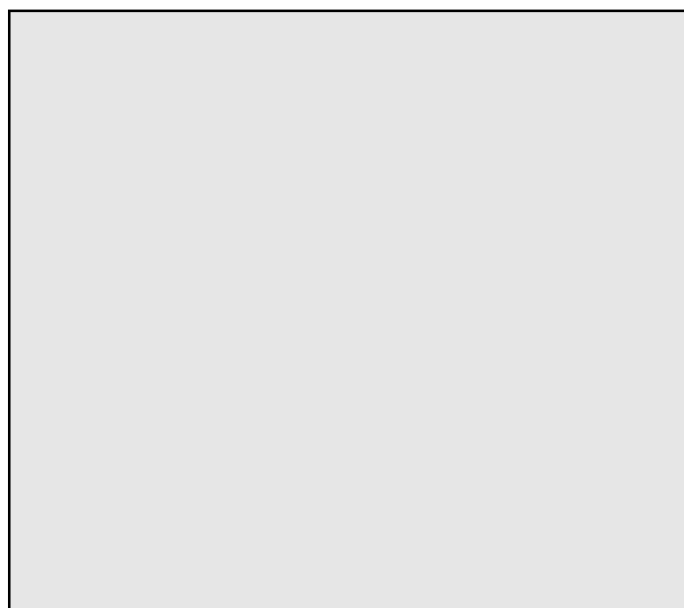
Following a number of negative outcomes for some companies in the sector in the first quarter, there needs to be a swing in favour clinical and regulatory success if the positive sentiment towards the sector observed in 2013 is to be maintained in 2014.

Key clinical and commercial developments in the next six months that should sustain interest include:

- FDA approval of MoxDuo IR for QRxPharma (May 25)
- Positive clinical results in Alchemia's Phase III oncology trial
- Commencement of dosing in Benitec Phase I/ II study (HCV)
- Neuren Pharmaceuticals completes enrollment in Phase II Rett Syndrome trial
- Viralytics initiates Phase II randomised cancer study
- Completion of recruitment for Innate Immunotherapeutics Phase II trial
- Approval for Tissue Therapies wound healing product in Europe
- Launch of Universal Biosensors second diagnostic product, with Siemens, in Europe
- Launch of Analytica's PeriCoach device

A continued strong performance from leading revenue generating businesses will also help sustain confidence in the sector.

Bioshares



**Capital Raisings by Australian-listed Biotech Companies Q1 2014**

| <b>Company</b>                   | <b>Investment Manager or Investor</b>                                       | <b>Type of Raising</b>          | <b>Funds Raised (\$M)</b> |
|----------------------------------|---|---------------------------------|---------------------------|
| Viralytics                       | Bell Potter (Lead Manager), Roth Capital Partners (Sole US Agent)           | Placement                       | \$27.10                   |
| Mayne Pharma                     |   | Placement (Bookbuild)           | \$18.00                   |
| Benitec Biopharma                | RA Capital, Perceptive Advisors, Special Situations Funds, Sabby Management | Placement - Stage I (of \$31 M) | \$15.75                   |
| Impedimed                        | Canaccord Genuity   | Placement                       | \$8.80                    |
| pSivida                          | RA Capital  | Placement                       | \$7.8                     |
| Phylogica                        | Paterson's Securities   | Rights Issue                    | \$6.10                    |
| Invion                           | Paterson's Securities, Morgans Corporate (Joint Leads)                      | Placement                       | \$5.00                    |
| Invion                           | Paterson's Securities, Morgans Corporate (Joint Leads)                      | Rights Issue                    | \$0.89                    |
| Bone Medical                     | Cornerstone Corporate   | Placement                       | \$3.0                     |
| Immuron                          | Paterson's Securities   | Rights Issue (\$9.66 M u/w )    | \$1.80                    |
| Patrys                           | Azure Capital   | Rights Issue Shortfall          | \$1.28                    |
| Patrys                           | Azure Capital   | Rights Issue Shortfall          | \$0.93                    |
| Nusep                            |   | Placement                       | \$0.45                    |
|                                  |   | IPOs (Simavita - \$1.1 M)       | \$1.1                     |
| <b>Total raised in Q1 2014</b>   |   |                                 | <b>\$98.0</b>             |
| <b>Total - 2014 (CY to date)</b> |   |                                 | <b>\$98.0</b>             |

| <b>Bioshares Model Portfolio (4 April 2014)</b> |                        |                                 |                   | <b>Portfolio Changes – 4 April 2014</b>   |
|---|------------------------|---------------------------------|-------------------|---|
| <b>Company</b>                                  | <b>Price (current)</b> | <b>Price added to portfolio</b> | <b>Date added</b> |   |
| Invision  | \$0.074                | \$0.089                         | February 14       | <b>IN:</b><br>No changes<br><br>Recommendations:<br><br><b>OUT:</b><br>No changes<br><br>Recommendations: |
| QRxPharma                                       | \$0.760                | \$0.620                         | December 13       |   |
| Impedimed                                       | \$0.217                | \$0.245                         | December 13       |   |
| Analytica                                       | \$0.029                | \$0.025                         | December 13       |   |
| Imugene   | \$0.011                | \$0.022                         | November 13       |   |
| Oncosil Medical                                 | \$0.125                | \$0.155                         | September 13      |   |
| IDT Australia                                   | \$0.310                | \$0.260                         | August 13         |   |
| Viralytics                                      | \$0.325                | \$0.300                         | August 13         |   |
| Tissue Therapies                                | \$0.320                | \$0.255                         | March 2013        |   |
| Somnomed  | \$1.43                 | \$0.94                          | January 2011      |   |
| Cogstate  | \$0.315                | \$0.13                          | November 2007     |   |
| Universal Biosensors                            | \$0.30                 | \$1.23                          | June 2007         |   |

#### Selected Clinical Trial Developments - Q1 2014

| <b>Company</b>         | <b>Code</b> | <b>Product/Therapeutic</b>                   | <b>Event</b>  |
|------------------------|-------------|--|---|
| Antisense Therapeutics | ANP         | ATL1103 (acromegaly)                         | Completed recruitment in Phase II 24 pt trial   |
| Antisense Therapeutics | ANP         | ATL1102 (stem cell mobilisation)             | Commenced dosing in Phase I trial in 10 healthy volunteers  |
| Biotron                | BIT         | BIT225 (HCV and HIV)                         | Announced additional interim Phase II data - all HCV genotype 3 pts were virus free at 24 weeks   |
| Benitec Biopharma      | BLT         | TT-035 (HCV)                                 | Initiated screening in Phase I/II trial in HCV subjects   |
| Bionomics              | BNO         | BNC105(metastatic renal cell cancer)         | Phase II trial in 139 patients did not meet primary endpoint  |
| Clinuvel Pharm.        | CUV         | Scenesse(afamelanotide 16mg implant)         | Announced physician led study in Hailey-Hailey disease (familial benign chronic pemphigus); 10 pts, one year, six month follow up                                 |
| Invision               | IVX         | IVX102 (nadalol)                             | FDA hold on Phase II trial lifted; trial to enroll 136 pts with chronic bronchitis enrolled in a validated smoking cessation program                              |
| Mesoblast              | MSB         | Allogeneic MPCs (Intervertebral Disc Repair) | Reported significant reduction in back pain compared HA carrier alone, reduced opioid use, reduced need for additional interventions; to commence Phase III trial |
| Optiscan Imaging       | OIL         | Endomicroscopy platform                      | Commenced study of second generation endomicroscopy platform in the gastroenterology field, St Vincent's Hospital, Sydney   |
| Osprey Medical         | OSP         | AVERT (dye reduction system)                 | Enrolled first subject in 700 pt IDE study; seeking claim expansion to include "reduction in Contrast Induced Nephropathy"  |
| Patrys                 | PAB         | PAT-SM6 (Multiple myeloma)                   | Announced final results of Phase I/IIa trial in 12 pts; 4/12 pts showed evidence of stable disease; primary endpoint of safety was met; no MTD was reached        |
| Prana Biotech          | PBT         | PBT2 (Alzheimer's disease)                   | Did not meet primary endpoint of reduction in beta-amyloid plaques in the brains of prodromal mild AD pts   |
| Prana Biotech          | PBT         | PBT2 (Huntington's disease)                  | Achieved mixed results in Phase II trial; met safety and tolerability endpoint  |
| Viralytics             | VLA         | CAVATAK (oncolytic virotherapy)              | Commenced Phase I/II study; IV delivery in 30 late stage melanoma, prostate, lung or bladder cancer   |

## The Australian Listed Life Sciences Sector

**March 31, 2014 : Capitalisation \$53.8 billion, 94 companies**

### Bioshares Large Cap. Index

| Company                     | Code | Cap. \$m | Principal Activities   | Change - Quarter | Change - Year | Price 31/03/14 |
|-----------------------------|------|----------|--|------------------|---------------|----------------|
| CSL                         | CSL  | 33,613   | Manufactures pharmaceutical products including vaccines and human plasma fractions | 1%               | 18%           | \$69.73        |
| Resmed Inc.                 | RMD  | 6,740    | Manufactures diagnostic and treatment equipment for sleeping disordered breathing  | -10%             | 9%            | \$4.76         |
| Cochlear                    | COH  | 3,257    | Manufactures cochlear hearing implants   | -3%              | -16%          | \$57.07        |
| Sigma Pharmaceuticals       | SIP  | 745      | Pharmaceutical manufacturing and wholesaling                                       | 2%               | -10%          | \$0.67         |
| <b>Capitalisation Total</b> |      | 44,354   |  |                  |               |                |

### Bioshares Index

| Company             | Code | Cap. \$m | Principal Activities  | Change - Quarter | Change - Year | Price 31/03/14 |
|---------------------|------|----------|---|------------------|---------------|----------------|
| Mesoblast           | MSB  | 1,751    | Developing therapies based on mesenchymal pre-cursor stem cells, with applications in cartilage regrowth and heart and bone repair. Acquired assets from Osiris Therap. | -7%              | -11%          | \$5.450        |
| Sirtex Medical      | SRX  | 871      | The company's core technology uses radioactive particles to irradiate tumours in the liver. Approved for use in most major regions.                                     | 32%              | 40%           | \$15.530       |
| Mayne Pharma Group  | MYX  | 557      | Manufactures, develops and markets generic drugs, with operations in Australia and the USA  | 28%              | 98%           | \$0.950        |
| Unilife Corporation | UNS  | 458      | Developer of retractable syringes   | -7%              | 113%          | \$0.745        |
| Prana Biotechnology | PBT  | 447      | Developing drugs to treat CNS diseases such as Alzheimer's and Parkinson's  | 35%              | 384%          | \$1.040        |
| Blackmores          | BKL  | 442      | Manufactures vitamin, mineral and herbal supplements and skin & hair products in Australia and N.Z.   | 24%              | -15%          | \$25.930       |
| Acrux               | ACR  | 286      | Developer of the transdermal drug products Axiron, Evamist/Ellavie and Recuvyra.  | -33%             | -56%          | \$1.720        |
| API                 | API  | 276      | Pharmaceutical wholesaler   | -6%              | 28%           | \$0.565        |
| GI Dynamics         | GID  | 228      | Commercialising the Endobarrier, an implantable polymer liner for the management of obesity and diabetes  | -24%             | -11%          | \$0.570        |
| Nanosonics          | NAN  | 227      | Developing a novel disinfection technology, the first product is a point of care ultrasound probe disinfection unit   | 2%               | 79%           | \$0.860        |
| Bionomics           | BNO  | 221      | Developing drugs to treat cancer and CNS diseases, and has also developed a gene diagnostic for epilepsy.   | -30%             | 39%           | \$0.530        |
| Starpharma Holdings | SPL  | 218      | Developer of pharmaceutical applications of chemical scaffolds known as 'dendrimers'  | -12%             | -29%          | \$0.765        |

## Bioshares Index

| Company                | Code | Cap. \$m | Principal Activities   | Change - Quarter | Change - Year | Price 31/03/14 |
|------------------------|------|----------|--|------------------|---------------|----------------|
| Anteo Diagnostics      | ADO  | 203      | Developer of a biological coatings technology that can be applied to immunoassays, bio-separations, drug delivery and other medical devices                          | 53%              | 322%          | \$0.245        |
| Admedus                | AHZ  | 176      | Diversified medical products group. Investor in Coridon, a vaccine technology company.   | -10%             | 383%          | \$0.140        |
| Alchemia               | ACL  | 172      | Biopharmaceutical company with a revenue generating product, generic fondaparinux. Lead product HA-Irinotecan in a pivotal Phase III trial for colorectal cancer.    | -7%              | 61%           | \$0.530        |
| Benitec Biopharma      | BLT  | 162      | R&D company focusing on gene silencing, specifically DNA delivered RNAi technology   | 182%             | 398%          | \$1.620        |
| Neuren Pharmaceuticals | NEU  | 136      | Developing neuroprotective therapeutics  | -23%             | 159%          | \$0.088        |
| QRxPharma              | QRX  | 126      | Developing a 'dual opioid' drug (MoxDuo) to treat moderate to severe pain  | 3%               | -34%          | \$0.770        |
| pSiVida                | PVA  | 118      | Developing drug delivery technologies, with a special focus on ophthalmic applications   | -5%              | 95%           | \$4.320        |
| Vita Life Sciences     | VSC  | 101      | Development, manufacture and distribution of prescription and OTC medicines as well as complementary and alternative medicines, dietary supplements and health foods | 12%              | 27%           | \$1.775        |
| Phosphagenics          | POH  | 96       | Commercialising a platform technology (alpha-tocopherol) that improves the delivery of pharmaceutical and other products across the skin                             | -18%             | -28%          | \$0.094        |
| Tissue Therapies       | TIS  | 92       | Developing the VitroGro product for ulcer and wound healing  | 15%              | 119%          | \$0.350        |
| Regeneus               | RGS  | 81       | Commercialisation of autologous adipose derived stem cells and factors. Markets HiQCell for human use and CryoShot for veterinary use.                               | -4%              | 0%            | \$0.440        |
| Medical Developments   | MMP  | 80       | Commercialising the Pentrox inhaler for temporary pain relief. Used widely in ambulances across Australia.   | 21%              | -24%          | \$1.400        |
| Osprey Medical         | OSP  | 74       | Developing the AVERT system to limit the incidence of contrast induced nephropathy   | -12%             | 20%           | \$0.600        |
| OBJ                    | OBJ  | 73       | Developing transdermal drug delivery technologies  | 55%              | 292%          | \$0.051        |
| Clovercorp             | CLV  | 73       | Development and production of omega-3 food additives from tuna oil   | -15%             | -29%          | \$0.440        |
| Somnomed               | SOM  | 69       | Markets oral devices for the treatment of sleep apnea and snoring.   | 41%              | 61%           | \$1.550        |
| SDI                    | SDI  | 67       | Manufacture & distribution of amalgam (fillings) & other dental materials and product R&D  | -23%             | 38%           | \$0.565        |
| Dorsavi                | DVL  | 65       | Commercialising a wireless sensor movement monitoring system and products for use in the Elite Sports, OH&S and medical/physiotherapy markets                        | 29%              |               | \$0.540        |

## Bioshares Index

| Company                    | Code | Cap. \$m | Principal Activities  | Change - Quarter | Change - Year | Price 31/03/14 |
|----------------------------|------|----------|---|------------------|---------------|----------------|
| Progen Pharmaceuticals     | PGL  | 62       | A developer of cancer therapeutics, including PI-88 and PG545   | 346%             | 346%          | \$1.115        |
| Clinuvel Pharmaceuticals   | CUV  | 61       | Developing an analogue of the alpha-MSH protein, named Scenesse, as a photo-protective agent  | 67%              | -34%          | \$1.590        |
| Universal Biosensors       | UBI  | 60       | Development, manufacture and commercialisation of a range of in vitro diagnostic tests for point-of-care use                                    | -26%             | -51%          | \$0.340        |
| Viralytics                 | VLA  | 58       | Developing a cancer treatment based on the application of viruses (oncolytic virus technology)  | 3%               | 5%            | \$0.315        |
| SUDA                       | SUD  | 57       | Developing the anti-malarial product ArTiMist. Acquired drug delivery technology and suite of products in development from Novodel              | -21%             | 94%           | \$0.062        |
| Calzada                    | CZD  | 54       | Holds a 100 % stake in PolyNovo, a polymer chemistry company.   | 65%              | 160%          | \$0.130        |
| Isona                      | ISN  | 53       | Respiratory and pulmonary devices company. Recently launched Airsona, an ehealth product.   | -40%             | 150%          | \$0.200        |
| Reva Medical               | RVA  | 50       | Developing a bioresorbable coronary stent   | -69%             | -73%          | \$0.150        |
| Prima Biomed               | PRR  | 49       | Developing the CVac immunotherapy.  | 3%               | -58%          | \$0.040        |
| Simavita                   | SVA  | 47       | Commercialising an instrumented incontinence assessment device  | 95%              | 0%            | \$0.800        |
| Innate Immuno-therapeutics | IIL  | 43       | Developing MIS416 to treat secondary progressive multiple sclerosis   | 25%              |               | \$0.250        |
| Impedimed                  | IPD  | 41       | Markets products that aid the diagnosis of secondary lymphoedema, muscle wasting and other disorders  | -8%              | 156%          | \$0.225        |
| Invion                     | IVX  | 41       | Evaluating Xtoll biologic for lupus and developing the drugs Nadalol and Zafirlukast for respiratory conditions                                 | -11%             | 67%           | \$0.075        |
| Avita Medical              | AVH  | 39       | Markets ReCell, a skin repair product   | -11%             | 4%            | \$0.120        |
| Ellex Medical Lasers       | ELX  | 36       | Develops, manufactures and markets solid state ophthalmic lasers used to treat secondary cataracts and retinal disorders.                       | -7%              | 76%           | \$0.335        |
| Oncosil Medical            | OSL  | 35       | Developing Oncosil, a brachytherapy for pancreatic cancer.  | 0%               | 242%          | \$0.130        |
| Genetic Technologies       | GTG  | 34       | Provides DNA paternity testing services and holds broad patents relating to the use of non-coding DNA.  | -4%              | -29%          | \$0.053        |
| Probiotec                  | PBP  | 33       | Manufacturer, marketer and distributor of a range of over the counter (OTC) pharmaceuticals, complementary medicines and speciality ingredients | 50%              | 85%           | \$0.630        |

## Bioshares Index

| Company                  | Code | Cap. \$m | Principal Activities  | Change - Quarter | Change - Year | Price 31/03/14 |
|--------------------------|------|----------|---|------------------|---------------|----------------|
| Antisense Therapeutics   | ANP  | 33       | Developing antisense compounds to treat multiple sclerosis and acromegaly   | 53%              | 130%          | \$0.230        |
| Novogen                  | NRT  | 30       | Acquired Triaxial Pharmaceuticals in 2012. Now developing 'super' benzopyrans for the treatment of cancer.  | -10%             | 0%            | \$0.180        |
| Patrys                   | PAB  | 30       | Developing human antibody therapies for the treatment of lung, pancreatic, gastric and colon cancers  | -17%             | 39%           | \$0.043        |
| Cogstate                 | CGS  | 30       | Marketing cognitive performance diagnostic products   | -17%             | -23%          | \$0.300        |
| Pharmaxis                | PXS  | 29       | Markets the lung function test, Aridol. Bronchitol is approved in Europe for the management of cystic fibrosis  | -10%             | -71%          | \$0.095        |
| Living Cell Technologies | LCT  | 29       | Developing cell therapies for diabetes, Parkinson's disease and Huntington's disease  | 3%               | 67%           | \$0.080        |
| Medical Australia        | MLA  | 28       | Manufacture and supply of medical devices and equipment. Has acquired Medivet, an animal stem cell company  | 10%              | 200%          | \$0.270        |
| Brain Resource Corp      | BRC  | 25       | Development and commercialisation of functional brain analysis techniques   | 0%               | -4%           | \$0.250        |
| Cryosite                 | CTE  | 23       | Provides specialised storage services, especially for umbilical cord blood  | 8%               | -7%           | \$0.495        |
| USCOM                    | UCM  | 23       | Marketing a non-invasive heart output function monitor. Recently acquired Pulsecor, which has developed a non-invasive central blood pressure product | 114%             | 50%           | \$0.300        |
| IDT Australia            | IDT  | 23       | Manufacturer of pharmaceutical ingredients to international standards for major pharmaceutical groups.  | -20%             | 22%           | \$0.300        |
| Resonance Health         | RHT  | 22       | Marketing the FerriScan technology, a non-invasive tool for measuring liver iron levels   | -3%              | 307%          | \$0.061        |
| ITL                      | ITD  | 21       | Develops and distributes medical devices such as safety equipment to prevent needle stick injuries and sterile preparation kits.                      | -14%             | 4%            | \$0.250        |
| Cellmid                  | CDY  | 21       | Developing therapies that target the midkine protein. Recently launched a range of hair loss products.  | -3%              | -18%          | \$0.028        |
| Analytica                | ALT  | 19       | A medical devices company developing the Pericoach product to aid in the management of female urinary incontinence                                    | 4%               | 27%           | \$0.028        |
| Atcor Medical            | ACG  | 19       | Markets the SphygmoCor device, a noninvasive technology that provides information regarding the functioning of the cardiovascular system              | -29%             | 29%           | \$0.120        |
| PharmAust                | PAA  | 19       | Manages Epichem, a drug discovery business. Also developing an veterinary anti-parasitic compound (PPL-1) as a human and animal cancer therapy        | 18%              | -7%           | \$0.013        |



## Bioshares Index

| Company                      | Code | Cap. \$m | Principal Activities   | Change - Quarter | Change - Year | Price 31/03/14 |
|------------------------------|------|----------|--|------------------|---------------|----------------|
| Avexa                        | AVX  | 19       | Developing an HIV drug, apricitabine. Has invested in a US coal company.   | 67%              | 18%           | \$0.020        |
| Cynata Therapeutics          | CYP  | 18       | Stell cell technology company aiming to produce unlimited uniform, pharmaceutical grade MSCs from a single donor.  | -18%             | 0%            | \$0.410        |
| Compumedics                  | CMP  | 18       | Develops, manufactures and markets sleep diagnostic and monitoring equipment.  | 28%              | 96%           | \$0.110        |
| Asian American Medical Group | AJJ  | 18       | Manages liver treatment centres in Asia  | -19%             | -41%          | \$0.085        |
| Biotron                      | BIT  | 16       | Developing compounds to treat HCV and HIV  | 38%              | -9%           | \$0.105        |
| Immuron                      | IMC  | 15       | Sales and development of hyper-immune bovine colostrum products for therapeutic use  | -11%             | 33%           | \$0.008        |
| Phylogica                    | PYC  | 15       | Developing peptide compound libraries for use in human therapeutics  | 47%              | 9%            | \$0.025        |
| Scigen                       | SIE  | 14       | Developer and manufacturer of biopharmaceuticals. Company is based in Singapore and was spun out of Sonic Healthcare in 2002.                            | -55%             | -38%          | \$0.025        |
| Rhinomed                     | RNO  | 13       | Developing nasal technologies with applications for sport performance, sleep and drug delivery   | -27%             | -6%           | \$0.033        |
| Cyclopharm                   | CYC  | 12       | A nuclear medicine company that markets the Technegas lung imaging system  | -16%             | 75%           | \$0.210        |
| Circadian Technologies       | CIR  | 11       | Developing drugs, including antibodies, around the VEGF C and VEGF D targets   | 10%              | -17%          | \$0.225        |
| Holista Colltech             | HCT  | 10       | Extracts collagen from sheepskins and markets natural healthcare products.   | -26%             | 14%           | \$0.074        |
| Genera Biosystems            | GBI  | 10       | Develops, manufactures and distributes advanced molecular diagnostic tests, with a particular focus on women's health.                                   | -17%             | 26%           | \$0.120        |
| NuSep Holdings               | NSP  | 10       | Manufacture and sale of protein separations technologies   | -19%             | -8%           | \$0.060        |
| Imugene                      | IMU  | 9        | Developing a Her2 positive cancer vaccine technology, obtained through the acquisition of Biolife, also developing a buccal drug delivery technology     | -18%             | 56%           | \$0.014        |
| Actinogen                    | ACW  | 9.1      | Diversified biotechnology company. Collaborating with Leaf Energy on bioethanols project and with Curtin University on cancer stem cells.                | 2%               | 7%            | \$0.045        |
| LBT Innovations              | LBT  | 9        | Developed the MicroStreak technology for the automation of microbiology laboratory processing. Now developing an Automated Plate Assesment System (APAS) | 15%              | 91%           | \$0.090        |
| Optiscan Imaging             | OIL  | 8        | Manufactures confocal microscopes for clinical diagnosis   | -7%              | -47%          | \$0.050        |

## Bioshares Index

| Company                                | Code | Cap. \$m | Principal Activities   | Change - Quarter | Change - Year | Price 31/03/14 |
|--|------|----------|--|------------------|---------------|----------------|
| Bluechiip                              | BCT  | 7        | Development, manufacture and commercialisation of a tracking system for biological samples   | -35%             | -68%          | \$0.060        |
| Bone Medical                           | BNE  | 6        | Developing treatments for bone and joint degenerative diseases such as arthritis and osteoporosis. <b>Completed 50:1 share consolidation</b> | -76%             | -76%          | \$0.024        |
| Agenix                                 | AGX  | 2        | Seeking to outlicenseThromboview, an imaging agent. Acquired TB diagnostic assets from Tyrian Diagnostics.                                   | -6%              | -97%          | \$0.017        |
| Advanced Surgical Design & Manufacture | AMT  | 2        | A developer and manufacturer of prosthetic implants and medical devices  | -10%             | -57%          | \$0.045        |
| Medigard                               | MGZ  | 2        | Developed retractable syringe technology and other safety medical products.  | -29%             | 33%           | \$0.020        |
| Bioxyne                                | BXN  | 1.5      | Sale and distribution of probiotics.   | -20%             | -47%          | \$0.008        |

**Capitalisation Total** 9,480

## Listed Biotech Investment Funds or Companies

| Company         | Code | Cap. \$m | Principal Activities                                 | Change - Quarter | Change - Year | Price 31/03/14 |
|-----------------|------|----------|--|------------------|---------------|----------------|
| Biotech Capital | BTC  | 2        | The entity is engaged in the orderly sale of assets. | 14%              | -26%          | \$0.025        |

**Capitalisation Total** 2

**Capitalisation Total - All Indices** 53,836

**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**

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