

**In this edition...**

Well what a cracker of a year for biotech in 2009! As the Global Financial Crisis was playing out over the year and investors stormed back to the market, the Bioshares Index of 108 small-to-medium cap biotech stocks surged by 102% over the year, following seven consecutive quarters of declines.

The outlook for 2010 is a year of strong performance for the sector with many Tier-1 companies edging closer to commercialization of their products. An early commercialization deal or acquisition may set the sentiment for the year. And smaller biotechs will hope that investment sentiment filters through to the other end of the spectrum, where access to capital remains an issue.

**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 (May '07 - May '08)	-36%
Year 8 (May '08 - May '09)	-7.3%
Year 9 (May '09 - Current)	80.5%
<b>Cumulative Gain</b>	<b>251%</b>
<b>Av Annual Gain (9 yrs)</b>	<b>22.0%</b>

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

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

**David Blake**  
Ph: (03) 9326 5382  
Email: blake@bioshares.com.au  
**Mark Pachacz**  
Ph: (03) 9671 3222  
Email: pachacz@bioshares.com.au

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# Bioshares

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

## Quarterly Review

### 2009 – A Comeback Year for Biotech

Small cap Australian biotech stocks made a stronger than expected recovery in 2009, following a tumultuous year in 2008, in which stocks across the globe were sold down in response to the Global Financial Crisis. **The Bioshares Index**, which measures the performance of all small cap biotech and pharmaceutical stocks, built early gains with a 16% rebound in the March quarter. This was further propelled by 20.3% increase in the June quarter and very strong 35.1% surge in the September quarter. Growth tapered slightly in the December quarter, with a 7.2% increase recorded.

The Bioshares Index increased by 102.2% from the December quarter, 2008, and clearly outperformed the **Bioshares Large Cap Index**, which comprises CSL, Resmed, Cochlear and Sigma Pharmaceuticals, which remained essentially unchanged over the December quarter, moving upwards by a marginal 0.2% and increasing by 1.5% over the year.

#### Biotech Sector KPIs

	2009	2008
No. of companies (31/12)	112	128
Biotechs >\$100M cap	19	9
Bioshares Index (change)	102.2%	-60.0%
ASX300 Index	31.4%	-41.7%
Nasdaq Biotech Index	0.5%	-9.1%
Capital raised (\$M)	\$672	\$183
IPOs (Num)	0	3
Ave IPO raise (\$M)	\$0	\$5
CEO Separations	20	19

The appetite of investors for speculative biotech stocks increased significantly throughout 2009 for several reasons. The acquisition of **Arana Therapeutics** for \$319 million (initiated in February and completed in June) by US-based **Cephalon Inc** drew attention to the reality that the sector contained under-valued assets. Expectations that more acquisitions could eventuate were fulfilled with the acquisition of **Peplin** by **Leo Pharma AS** for \$307 million in the second half of the year.

Investors also looked for value amongst companies with later stage products in development. Some stocks benefited both from a strong portfolio of products in development and good timing. The swine influenza outbreak benefited the **Biota** share price, which finished the year at \$2.41, a gain of 619% from a year ago.

A feature that emerged in 2009 was the improvement in the ability of biotech companies to successfully manage product development. There were fewer clinical, regulatory and commercial set backs, relative to previous years, or if they occurred, were managed in a more competent manner. Solid and noteworthy progress was made, for example, by **Phar-**

*Cont'd over*

#### Index performances by Quarter

	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2010
Bioshares Index	-26.1%	16.0%	20.3%	35.1%	7.2%
Nasdaq Biotech Index	-12.7%	-6.4%	9.8%	12.0%	0.5%
Bioshares Large Cap Index	-8.1%	-3.8%	1.1%	4.2%	0.2%
ASX 300 Index	-19.3%	-3.6%	10.6%	20.1%	2.7%

**maxis** with Bronchitol for cystic fibrosis, **Mesoblast** with various adult stem cell therapies, **Acrux** with Axiron for testosterone deficiency in males and **ChemGenex** with Omapro for CML.

Not all companies fared well over 2009. The number of companies included in the Bioshares tables of ASX listed life science companies fell by 16, with a number of companies entering administration, changing the business focus to activities outside the life sciences or simply reaching a point of classification as a dormant shell company. (As noted above, companies such as Arana and Peplin were acquired.)

Companies with earlier stage projects requiring significant tranches of capital to reach product development decision points struggled to raise funds, although a number accessed funds from convertible loan providers.

**Capital Inflows**

Where prospects of a capital drought were foremost in the minds of biotech company managers at the close of 2008 and in the early part of 2009, the year has been characterised by strong capital inflows from the June quarter onwards.

The year was capped off with \$345 million raised by life science companies in the December quarter, up from \$167 million in the September quarter. These figures sit in stark contrast to the December quarter 2008 and March quarter 2009, in which \$19 million and \$27 million was raised respectively. A total of \$672 million was raised in 2009, representing an increase of 265% from the amount raised in 2008.

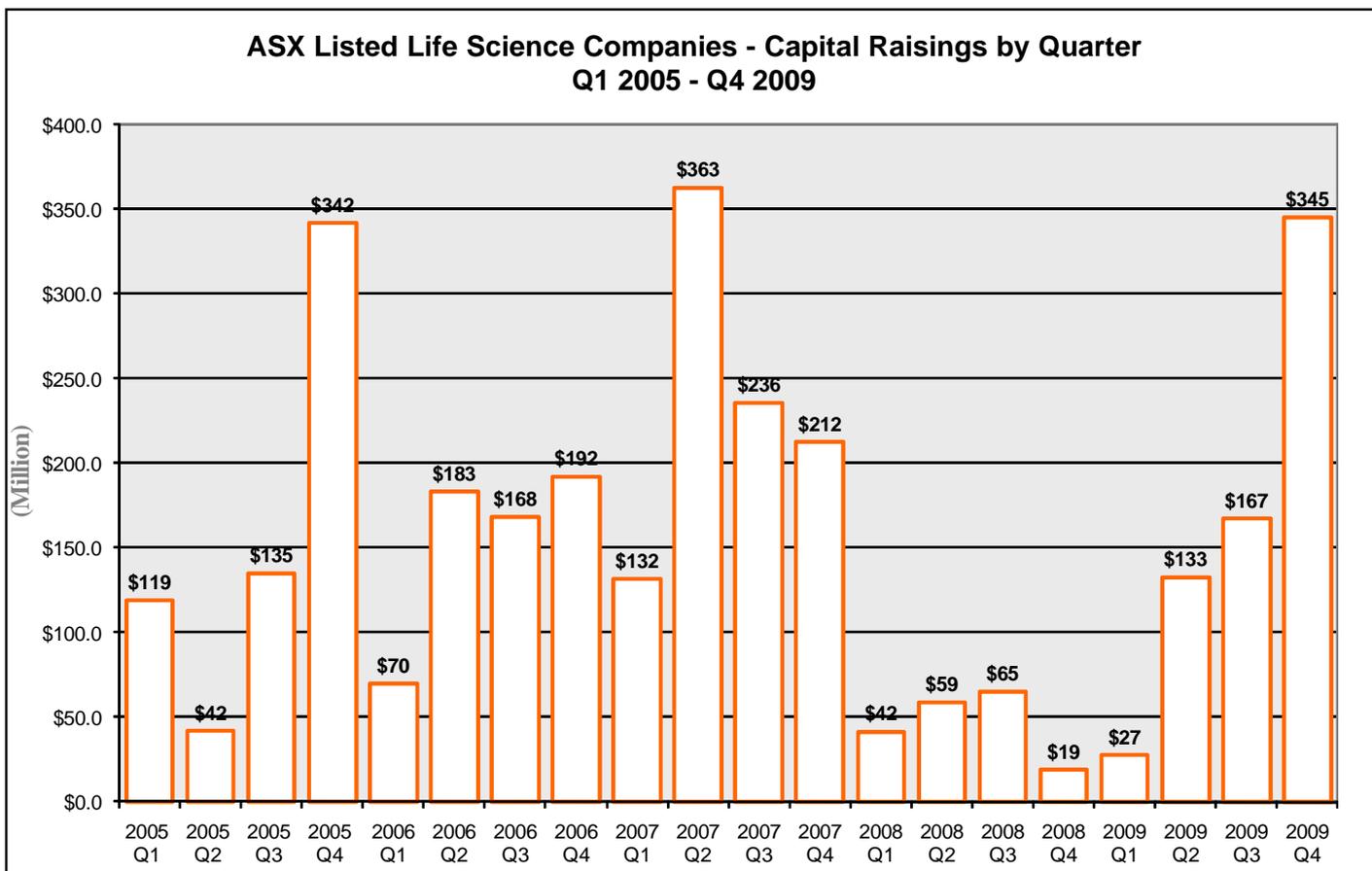
**Outlook for 2010**

International interest in Australian life science firms or their assets can be expected to continue in 2010, with the partnering or sale of Acrux’s Axiron a prospect in that category, and Chemgenex Pharmaceuticals another. An early deal may well set the sentiment for the sector in 2010.

Expect the divergence between the Tier-1 biotechs and the microcaps to continue into 2010. It will become easier to make good consistent gains from companies with solid business plans and with products on or close to market. And it will be harder to make exceptional gains following 2009’s strong performance. With investors still repairing portfolios following the Global Financial Crisis, there will be a much tighter view from investors. The trend of investors looking for medium term investment opportunities (i.e. a two year investment horizon) from sufficiently de-risked business plans is likely to continue. For smaller, earlier stage biotechs, funding remains a priority issue.

Although no biotech IPOs were conducted in 2009, the prospects for a renewed interest in IPOs appears to be gaining momentum. Several companies would appear to be waiting in the wings for the right mix of sentiment and risk capital to converge on companies looking to IPO. Pricing is always an issue with IPOs, as is quality. The inability of **CBio** to IPO according to its proposed timetable is a sign that the investment community has developed a degree of discernment regarding price and quality. **BPH Holdings**, formerly **Biopharmica**, intends to spin out and list Molecular Discovery Systems, a diagnostics technology business.

*Cont’d on page 5*



**Capital Raisings by Australian-listed Biotech Companies Q4 2009**

Company	Investment Manager or Investor	Type of raising	Funds raised (\$M)
API		Rights Issue	\$121.76
API		Placement	\$38.00
UNI		Placement	\$14.40
UNI		SPP	\$21.50
Avexa	RBS Morgans Corporate	SPP	\$15.30
Avexa	RBS Morgans Corporate	Placement	\$8.00
Starpharma	Shaw Corporate Finance	Placement	\$15.60
Alchemia		Rights Issue	\$15.50
QRxPharma	RBS Morgans Corporate	Rights Issue	\$13.60
Nanosonics	Wilson HTM	Placement	\$12.00
Prima Biomed		SPP	\$9.60
QRxPharma	RBS Morgans Corporate	Placement	\$8.00
BPH Corporate	Grandbridge Securities (part. u/w )	Transaction Specific Offer (2 Parts) * excludes funds raised for mining investment	\$7.89
Phosphagenics	BBY	SPP	\$7.00
Tissue Therapies		Placement	\$5.00
Tissue Therapies		SPP	\$2.70
Halcygen Pharmaceuticals		SPP	\$4.56
KarmelSonix		Placement	\$4.50
Cellmid		Placement	\$2.83
Genera Biosystems	JM Financial Group	Placement	\$2.30
Prima Biomed	Springtree Spec. Opp. Fund	Conv. Loan Funding (T3,T4,T5 & Oth)	\$2.25
OBJ	Novus Capital	Rights Issue	\$2.10
Phylogica	CPS Securities	Placement	\$2.00
OBJ	Novus Capital	Placement	\$1.90
Neuren Pharmaceuticals		Placement	\$1.50
Optiscan Imaging		SPP (inc 50K Placement)	\$1.18
Holista Colltech		Placement	\$1.00
Nusep		Placement	\$0.94
Incitive		Placement	\$0.75
Neuren Pharmaceuticals	Springtree Spec. Opp. Fund	Conv. Loan Funding	\$0.70
HealthLinx	Stonebridge Securities	Placement (T1)	\$0.63
Helicon Group		SPP	\$0.11
<b>Total</b>			<b>\$345.1</b>
<b>Total raised in Q3 2009</b>			<b>\$167.1</b>
<b>Total raised in Q2 2009</b>			<b>\$132.7</b>
<b>Total raised in Q1 2009</b>			<b>\$27.4</b>
<b>Total - 2009</b>			<b>\$672.4</b>

## Selected Clinical Trial Developments - December Quarter 2009

	Company	Code	Product/Therapeutic	Event
1	BioMD	BOD	Gynecel ADAPT (treated biomaterial patch)	Commenced Phase II trial of Gynecel ADAPT in pelvic floor surgery - 2 pts implanted
2	Bionomics	BNO	BNC210 (anxiety)	Completed first stage of Phase I trial - evaluation of safety and pharmacokinetics
3	Biota (with Daiichi Sankyo)	BTA	CS-8958 (influenza)	Commenced Phase III trial of CS-8958 for influenza protection
4	Clinuvel	CUV	afamelonitide (EPP)	Released preliminary results from Phase III trial in erythropoietic protoporphyria (EPP). Data at four months (out of 12) showed a reduction in the average number of reactions
5	Clinuvel	CUV	afamelonitide (PLE)	Released preliminary results (36 pts) from Phase III trial in polymorphic light eruption (PLE). A trend towards reduction of dermal symptoms typical of PLE was observed.
6	Clinuvel	CUV	afamelonitide (photoprotection)	Released results from Phase II trial in 16 pts of the photoprotective effect on pts undergoing systemic photodynamic therapy.
7	Cytopia	CYT	CYT387 (myeloproliferative neoplasms)	Commenced dosing in Phase I/II study at the Mayo Clinic; 30-45 pts
8	Cytopia	CYT	CYT997 (cancer)	Opened fourth centre for Phase II glioma study; 29-36 pts
9	Eastland Medical	EMS	Artimist (sub-lingual spray) (malaria)	Clinical field trial commenced in Rwanda
10	Immuron	IMC	Antibody-based formulation	Commenced Phase II trial for metabolic syndrome; 10 participants
11	Living Cell Technologies	LCT	DIABECCELL (encapsulated porcine insulin producing cells) (diabetes)	Implanted first Type 1 diabetes patient in New Zealand; 8 patient study
12	Mesoblast/Angioblast	MSB	Revescor (allogeneic mesenchymal precursor stem cells - MPCs)	Released interim data from Phase II congestive heart failure trial. First group of three groups (20 pts each) showed sustained improvement at six months. Pts on treatment reported a 22% mean increase in EF function whereas control group reported a 18% mean decline.
13	Mesoblast/Angioblast	MSB	Bone Marrow Transplant using cord blood expanded with MPCs	Reported results from first 18 pts showed with gains made in time to recovery for both neutrophils and platelets.
14	Pharmaxis	PXS	Bronchitol (Cystic fibrosis)	Phase III results for second six month dosing were reported, with lung function of pts treated with Bronchitol showing improvement changing from 6.5% to 8%
15	Pharmaxis	PXs	Bronchitol (bronchiectasis)	Commenced screening pts for 12 months study
16	Phosphagenics	POH	Oxycodone/TPM (targeted penetration matrix) (pain)	Commenced Phase Ib pharmacokinetic trial; 20 pts
17	Phosphagenics	POH	Phospha-E (metabolic syndrome)	Announced results of trial, which did not meet its endpoint, the reduction of hsCRP (High-sensitivity C-reactive protein)
18	Psivida	PVA	Iluvien (diabetic macular oedema)	Reported 24 month data from (2) Phase III Phase studies (956 pts). Primary endpoints of improving visual acuity by 15 or more letters from baseline, were met with both high and low doses of Iluvien, with results being statistically significant.
19	QRxPharma	QRX	MoxDuoIR (pain)	Commenced Phase III study for the management of severe post operative pain following bunionectomy
20	Sunshine Heart	SHC	C-Pulse (implantable heart assist device)	Implanted fifth (out of 20) patient in Phase I feasibility study
21	Viralitics	VLA	CAVATAK (oncolytic) (cancer)	Received approval to proceed to next dosing stage in Phase I head and neck cancer study

IPOs with a real chance of success will be those that are backed by management with a track record of success, with boards that are rich in industry experience, which together have developed a detailed roadmap of the path to commercial returns. The IPO market is showing early signs of recovery in the US, with four filings made in December, and three in November.

Another factor at play in valuations will be currency. While the Australian dollar remains strong against the US dollar, competitiveness issues may come to dominate the share prices of companies that generate earnings in the US. The key to assessing the performance of these companies is to see if value based effects impact on volume based measures of sales.

Another trend that can be expected to continue from 2009 is that acquisition of assets by more mature firms of companies that have fallen on hard times, or where the local assets of multi-national pharmaceutical firms have become available for consolidation into the operations of local businesses.

### Outperformers – 2010

The biggest share price gain in 2009 was that posted by **Prima Biomed**. Prima's share price, which finished at 15 cents, increased by 2900% for the year (Capitalisation: \$96 million). The company's current management has succeeded in obtaining approval to commence a Phase II clinical trial of the CVac ovarian cancer vaccine in the US.

Shares in **Scigen**, a company controlled by **Bioton SA**, rose by 900%. In July, Scigen struck an exclusive insulin supply and distribution agreement with **Bayer Shering Pharma AG** in China. This followed the termination of a distribution agreement with a Chinese firm in May. Details of a profit sharing agreement between Bioton and Scigen may have been a driver behind the share price

Amongst the more prominent stocks (by capitalisation) to record strong share price gains over the 12 month period were **Acrux** (+359%), **Alchemia** (350%), **Sirtex Medical** (+348%), **QRxPharma** (+290%) and **Unilife Medical Solutions** (+277%).

### Underperformers – 2010

In some ways, the worst performing stocks were those that entered administration and were wound up, with **Ventracor** standing as a high profile casualty in this regards. **Polartechnics**, **Fermiscan**, and **Avastra** all entered administration. **Occupational and Medical Innovations** entered administration on December 31, 2009.

The worst performing stock of 2009 was **Incitive**, which recorded a 77% decrease in its share price (0.07 cents). The company had been set to acquire V-Patch Medical Systems, but this plan fell through. It now appears the company will license the assets of Peptech Animal Health, a company associated with Incitive director, Mel Bridges.

Shares in **Atos Wellness** fell by 63% to finish at 0.015 cents and Xceed Capital shares fell by 60% to close at 0.022 cents.

**Fluorotechnics**, a lab products company which listed in 2008 (IPO price – \$1.00), on expectations of building near term profits, suffered a 60% decline in its share price, closing at 40 cents. The company, which is backed by fund manager **Hunter Hall**, returned to the market in 2009 to access working capital, obtaining \$1.23 million and this followed by a yet to finalised \$1.8 million.

Bioshares

Bioshares Model Portfolio (1 January 2010)			
Company	Price (current)	Price added to portfolio	Date added
Biodiem	\$0.23	\$0.15	October 2009
QRxPharma	\$0.78	\$0.25	December 2008
Hexima	\$0.48	\$0.60	October 2008
Atcor Medical	\$0.19	\$0.10	October 2008
CathRx	\$0.62	\$0.70	October 2008
Impedimed	\$0.78	\$0.70	August 2008
Mesoblast	\$1.36	\$1.25	August 2008
Circadian Technologies	\$0.70	\$1.03	February 2008
Patrys	\$0.13	\$0.50	December 2007
Bionomics	\$0.38	\$0.42	December 2007
Cogstate	\$0.32	\$0.13	November 2007
Sirtex Medical	\$7.55	\$3.90	October 2007
Clinuvel Pharmaceuticals	\$0.27	\$0.66	September 2007
Starpharma Holdings	\$0.70	\$0.37	August 2007
Pharmaxis	\$2.72	\$3.15	August 2007
Universal Biosensors	\$1.85	\$1.23	June 2007
Probiotec	\$2.48	\$1.12	February 2007
Chemgenex Pharma.	\$0.99	\$0.38	June 2006
Acrux	\$2.18	\$0.83	November 2004
Alchemia	\$0.72	\$0.67	May 2004

### Portfolio Changes – 1 January 2010

**IN:**  
No changes.

**OUT:**  
No changes.

**The Australian Listed Life Sciences Sector**  
**December 31, 2009: Capitalisation \$35.1 billion, 112 companies**

## Bioshares Large Cap. Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/09
CSL	CSL	18,187	Manufactures pharmaceutical products including vaccines and human plasma fractions	-3%	-4%	\$32.49
Resmed Inc.	RMD	4,411	Manufactures diagnostic and treatment equipment for sleeping disordered breathing	14%	11%	\$5.93
Cochlear	COH	3,892	Manufactures cochlear hearing implants	3%	25%	\$69.07
Sigma Pharmaceuticals	SIP	1,164	Pharmaceutical manufacturing and wholesaling	-7%	-8%	\$0.99
<b>Capitalisation Total</b>		27,654				

## Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/09
Pharmaxis	PXS	596	Marketing a lung function test, Aridol, and developing the Bronchitol product to treat cystic fibrosis, bronchiectasis and COPD.	13%	125%	\$2.72
Heartware International	HIN	488	Developing a mechanical heart pump (LVAD).	22%	95%	\$1.17
Biota	BTA	431	Commercialised Relenza anti-flu drug and flu diagnostic kits. Now developing an improved version, laninamivir with partner Daiichi Sankyo.	-12%	619%	\$2.41
Sirtex Medical	SRX	421	The company's core technology uses radioactive particles to irradiate tumours in the liver. Approved for use in most major regions.	56%	348%	\$7.55
Acrux	ACR	347	A Pooled Dev. Fund commercialising a drug delivery technology that uses sunscreen penetration enhancers to aid transdermal drug delivery.	28%	359%	\$2.18
Blackmores	BKL	346	Manufactures vitamin, mineral and herbal supplements and skin & hair products in Australia and N.Z.	3%	58%	\$20.90
API	API	337	Pharmaceutical wholesaler	-19%	64%	\$0.69
Cellestis	CST	314	Marketing a diagnostic for latent tuberculosis	-3%	87%	\$3.27
Universal Biosensors	UBI	291	Development, manufacture and commercialisation of a range of in vitro diagnostic tests for point-of-care use.	38%	214%	\$1.85
Unilife Medical Solutions	UNI	281	Developer of retractable syringes.	-34%	277%	\$0.91
ChemGenex Pharmaceuticals	CXS	278	Developer of the drug Omacetaxine, which has potential to treat CML patients that develop the T315i mutation.	34%	112%	\$0.99
Scigen	SIE	193	Developer and manufacturer of biopharmaceuticals. Company is based in Singapore and was spun out of Sonic Healthcare in 2002.	192%	900%	\$0.35
Mesoblast	MSB	191	Developing therapies based on mesenchymal pre-cursor stem cells, with applications in cartilage regrowth and heart and bone repair.	32%	36%	\$1.36
Starpharma Holdings	SPL	165	Developer of pharmaceutical applications of chemical scaffolds known as 'dendrimers'.	22%	256%	\$0.70

## Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/09
Nanosonics	NAN	144	Developing a novel disinfection technology. The first product is a point of care ultrasound probe disinfection unit.	35%	230%	\$0.66
Alchemia	ACL	137	Commercialising new solid phase carbohydrate synthesis technology. First product, a synthetic heparin, to be launched by Dr Reddy's in 2009/10.	26%	350%	\$0.72
Avexa	AVX	131	Developing antiviral therapies for HIV and HCV and a novel antibiotic.	35%	109%	\$0.16
Probiotec	PBP	130	Manufacturer, marketer and distributor of a range of over the counter (OTC) pharmaceuticals, complementary medicines and speciality ingredients	0%	66%	\$2.48
Bionomics	BNO	119	Developing drugs to treat cancer and CNS diseases, and has also developed a gene diagnostic for epilepsy.	39%	67%	\$0.38
Prima Biomed	PRR	96	Developing the CVac immunotherapy.	-14%	2900%	\$0.15
Halcygen	HGN	95	Developing an improved dosing anti-fungal drug, Subazole, based on drug delivery technology developed by Mayne Pharma.	47%	247%	\$0.66
Impedimed	IPD	85	Develops devices that aid the diagnosis of secondary lymphoedema, muscle wasting and other disorders	18%	4%	\$0.78
Clinuvel Pharmaceuticals	CUV	82	Developing an analogue of the alpha-MSH protein as a photo-protective agent	-19%	13%	\$0.27
QRxPharma	QRX	80	Developing a 'dual opioid' drug to treat moderate to severe pain.	-15%	290%	\$0.78
pSiVida	PVA	78	Developing drug delivery technologies, with a special focus on ophthalmic applications	-14%	223%	\$4.26
Solagran	SLA	74	Developing complementary medical compounds called Bioeffectives.	61%	56%	\$0.25
Novogen	NRT	61	Developing analogues of naturally occurring phenolic hormones to treat cancers and other conditions.	-18%	-14%	\$0.60
Institute of Drug Technology	IDT	60	Manufacturer of pharmaceutical ingredients to international standards for major pharmaceutical groups.	-21%	-18%	\$1.40
Living Cell Technologies	LCT	58	Developing cell therapies for diabetes, haemophilia and Huntington's disease.	-6%	120%	\$0.22
Ascent PharmaHealth	APH	52	A generic pharmaceutical manufacturer and distributor.	-11%	24%	\$0.21
Cordlife	CBB	51	Rolling out tissue banking services in Australia and Asia	40%	120%	\$0.56
Phosphagenics	POH	50	Commercialising a drug delivery technology improving the delivery of vitamin E and existing pharmaceutical products through phosphorylation.	-29%	-12%	\$0.07
Genera Biosystems	GBI	49	Develops, manufactures and distributes advanced molecular diagnostic tests, with a particular focus on women's health.	-1%	231%	\$0.80
CathRx	CXD	44	Developing novel modular cardiac catheters for the diagnosis and treatment of abnormal heart rhythms	55%	24%	\$0.62

## Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/09
Clovercorp	CLV	40	Development and production of omega-3 food additives from tuna oil.	23%	36%	\$0.25
Hexima	HXL	38	Research and development of genetic technologies that can enhance the resistance of crops to insects and fungal pathogens.	-13%	13%	\$0.48
Prana Biotechnology	PBT	35	Developing drugs to treat CNS diseases such as Alzheimer's and Parkinson's	-36%	-52%	\$0.15
Southern Dental Industries	SDI	34	Manufacture & distribution of amalgam (fillings) & other dental materials and product R&D.	14%	14%	\$0.29
Progen Pharmaceuticals	PGL	33	A developer of cancer therapeutics	-8%	-29%	\$0.55
Somnomed	SOM	33	Commercialising an oral device for the treatment of sleep apnea and snoring.	43%	115%	\$0.86
Antisense Therapeutics	ANP	32	Developing antisense compounds to treat multiple sclerosis and acromegaly	10%	57%	\$0.06
Phylogica	PYC	32	Developing phylomer (protein fragment shapes) compound libraries for use in human therapeutics.	35%	238%	\$0.14
Circadian Technologies	CIR	32	Developing drugs, including antibodies, around the VEGF C and VEGF D targets.	-10%	21%	\$0.70
USCOM	UCM	29	Marketing a non-invasive heart output function monitor.	-13%	61%	\$0.70
Compumedics	CMP	29	Develops, manufactures and markets sleep diagnostic and monitoring equipment.	-3%	44%	\$0.18
OBJ	OBJ	28	Developing transdermal drug delivery technologies	625%	480%	\$0.03
Brain Resource Corp	BRC	28	Development and commercialisation of functional brain analysis techniques.	11%	50%	\$0.30
Eastland Medical Systems	EMS	26	Developing retractable syringes, ClipOn and VetLock, and anti-malarial product ArTiMist.	15%	-9%	\$0.08
KarmelSonix	KSX	26	Respiratory and pulmonary devices company	-34%	171%	\$0.04
Patrys	PAB	23	Developing human antibody therapies for the treatment of lung, pancreatic, gastric and colon cancers	-11%	25%	\$0.13
Tissue Therapies	TIS	22	Developing the VitroGro product for ulcer and wound healing	-22%	68%	\$0.16
Advanced Surgical Design & Manufacture	AMT	21	A developer and manufacturer of prosthetic implants and medical devices	50%	71%	\$0.60
Cogstate	CGS	21	Marketing cognitive performance diagnostic products.	29%	97%	\$0.32
Sunshine Heart	SHC	20	Developing the C-Pulse heart assist device. The C-Pulse wraps around and compresses the aorta, increasing blood flow through the body.	-19%	-12%	\$0.04

## Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/09
BioProspect	BPO	19	Developing insecticides from naturally occurring molecules	70%	160%	\$0.04
Cyclopharm	CYC	19	A nuclear medicine company that markets the Technegas lung imaging system	45%	10%	\$0.11
Atcor Medical	ACG	19	Markets the SphygmoCor device, a noninvasive technology that provides information regarding the functioning of the cardiovascular system	9%	23%	\$0.19
Imuron	IMC	19	Specialises in R&D of hyper-immune bovine colostrum products for therapeutic use in animals and humans.	14%	173%	\$0.08
Biodiem	BDM	18	Focused on the development of LAIV influenza vaccines	31%	229%	\$0.23
Avita Medical	AVH	17	Markets ReCell, a skin repair product	-3%	358%	\$0.17
Ellex Medical Lasers	ELX	15	Develops, manufactures and markets solid state ophthalmic lasers used to treat secondary cataracts and retinal disorders.	0%	80%	\$0.18
Genetic Technologies	GTG	15	Provides DNA paternity testing services and holds broad patents relating to the use of non-coding DNA.	-24%	-16%	\$0.04
Analytica	ALT	15	A medical devices company that has developed a retractable syringe	77%	-43%	\$0.04
Bone Medical	BNE	14	Developing treatments for bone and joint degenerative diseases such as arthritis and osteoporosis.	-21%	-33%	\$0.14
Austofix	AYX	14	Manufacturer and developer of orthopaedic fixation devices	47%	47%	\$1.25
Benitec	BLT	14	R&D company focusing on gene silencing, specifically DNA delivered RNAi, technology.	-17%	3%	\$0.04
Neuren Pharmaceuticals	NEU	13	Developing neuroprotective therapeutics	3%	270%	\$0.04
Viralytics	VLA	13	Developing a cancer treatment based on the application of viruses (oncolytic virus technology).	23%	-8%	\$0.04
Imugene	IMU	13	Developing animal products such as antibiotic alternatives used in the stock feed industry using a vaccine and gene therapy approach	-35%	4%	\$0.09
Fluorotechnics	FLS	12	Development and sale of scientific equipment and consumables, including fluorescent stains.	0%	-60%	\$0.40
Stirling Products	STI	12	Development of R-Salbutamol based products and the Immunoxell immune modulator	56%	250%	\$0.01
LBT Innovations	LBT	12	Developed the MicroStreak technology for the automation of microbiology laboratory processing.	-20%	-4%	\$0.12
PharmAust	PAA	11	Operates Epicchem and PharmAust Manufacturing, which provide products and services to biotech and pharma companies	22%	100%	\$0.04
Cellmid	CDY	11	Formerly Medical Therapies. Developing therapies that target the midkine protein	26%	-6%	\$0.03

## Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/09
Healthlinx	HTX	11	Detecting novel functions of known and new protein and peptides for therapeutic purposes.	-1%	38%	\$0.09
Acuvax	ACU	11	Holds interests in various therapeutics and vaccines	-26%	-32%	\$0.02
Optiscan Imaging	OIL	11	Manufacture of confocal microscopes for clinical diagnosis	-25%	46%	\$0.08
Vita Life Sciences	VSC	11	Development, manufacture and distribution of prescription and OTC medicines as well as complementary and alternative medicines, dietary supplements and health foods.	22%	340%	\$0.22
ITL	ITD	10	Develops and distributes medical devices such as safety equipment to prevent needle stick injuries and sterile preparation kits.	3%	-28%	\$0.08
Resonance Health	RHT	10	Marketing the FerriScan technology, a non-invasive tool for measuring liver iron levels	87%	180%	\$0.03
Biotron	BIT	10	Developing a compound to treat HCV	-32%	-21%	\$0.10
Calzada	CZD	9	Formerly Metabolic Pharmaceuticals. Holds a 87.65 % stake in PolyNovo, a polymer chemistry company.	-6%	15%	\$0.03
Cytopia	CYT	9	<b>Merger with YM Biosciences pending.</b> Small molecule drug development company with a focus on kinase targets. Lead program, CYT997 is at the Phase II level of development.	-13%	-42%	\$0.11
Virax Holdings	VHL	9	Developing a therapeutic and prophylactic vaccine for HIV.	-24%	90%	\$0.06
Medical Developments	MVP	9	Commercialising the Penthrax inhaler for temporary pain relief. Used widely in ambulances across Australia.	6%	-19%	\$0.17
Tyrian Diagnostics	TDX	8	Developer of diagnostic products, including the ReadRite-Alpha Amylase test ( a wheat quality test)	-30%	-47%	\$0.02
Holista Colltech	HCT	8	Has developed a novel technology for the extraction of collagen from sheepskins. Acquired Holista Biotech (Malaysia); 1: 10 consolidation	-6%	45%	\$0.15
Cryosite	CTE	7	Provides specialised storage services, especially for umbilical cord blood	67%	79%	\$0.15
Medigard	MGZ	7	Developed retractable syringe technology and other safety medical products.	-17%	122%	\$0.10
Occupational & Medical Innovations	OMI	7	<b>Currently suspended from trading. Entered Administration 31/12/09.</b> Developing safety devices used in the healthcare industry, including safety syringes.	0%	-42%	\$0.15
NuSep	NSP	6	Manufacture and sale of protein separations technologies.	56%	476%	\$0.27
Probiomics	PCC	6	Proprietary ownership of a unique probiotic strain	83%	340%	\$0.02
BioMD	BOD	5	Developing a tissue engineering technology, termed ADAPT	-28%	-16%	\$0.04
IM Medical	IMI	5	Markets the Intelliheart Cardiovascular Diagnostic System. Now acquiring a radiology and imaging business.	-25%	50%	\$0.00

## Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/09
Medic Vision	MVH	4	Currently suspended from trading. Marketing training software and hardware for surgeons.	-24%	-43%	\$0.03
Incitive	ICV	4	Has licensed a pipeline of animal health products from Peptech Animal Health	-13%	-77%	\$0.01
Giaconda	GIA	4	Developed novel (patented) combinations of registered drugs for the treatment of gastrointestinal disorders.	-66%	-13%	\$0.05
Anteo Diagnostics	ADO	3	Developer of a biological coatings technology that can be applied to immunoassays, bio-separations, drug delivery and other medical devices.	-22%	-59%	\$0.01
Atos Wellness	ATW	3	Manages wellness centres in Singapore, Malaysia, India, Australia, Austria and Germany	25%	-63%	\$0.02
Helicon Group	HCG	3	Exploiting niche market opportunities for medical products in China and other Asian markets.	-63%	500%	\$0.03
Telesso Technologies	TEO	2	Investigating new business activities	-13%	-13%	\$0.04
Genesis Research & Development Corp.	GEN	2	Developing RNAi based therapeutics. Interests in agricultural biotechnologies.	0%	-14%	\$0.06
NeuroDiscovery	NDL	2	Provides electrophysiology services to biotech and pharma, and is developing range of compounds for treating neuropathic pain.	-15%	-30%	\$0.04
Actinogen	ACW	2	Early stage developer of antibiotics that show activity against MRSA and VRE bacteria	-29%	16%	\$0.05
Select Vaccines	SLT	2	Development and commercialisation of infectious diseases diagnostics, vaccines and therapeutics for hepatitis-related diseases	75%	17%	\$0.01

**Capitalisation Total** 7,433

## Listed Biotech Investment Funds or Companies

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/09
BPH Corporate	BPH	25	<b>Formerly Biopharmica.</b> Managing cancer treatment and detection and bacterial DNA diagnostic projects. Portfolio investment approach.	-23%	311%	\$0.12
Biotech Capital	BTC	24	A Pooled Development Fund investing in unlisted Australian biotech companies and in public biotechs, including Alchemia, Starpharma, Neurodiscovery and Phylogica.	25%	161%	\$0.30
Xceed Capital	XCD	4	Holds a stake in Calzada and owns 100% of Boron Molecular, a chemistry services company.	-15%	-60%	\$0.02

**Capitalisation Total** 25

**Capitalisation Total - All Indexs** 35,112

**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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