

In this edition...

Investment sentiment swung decisively behind the quality end of the Australian biotech sector in the final quarter of 2010. The Bioshares Index posted a 20% gain on the back of a stunning deal consummated by Mesoblast with US company Cephalon. Trial results and drug approvals also aided the lift in the Bioshares Index, with Acrux's Axiron being approved by the FDA and Heartware successfully completing a pivotal trial of its heart assist device. Capital flows improved in the quarter with \$375 million obtained by life science firms, including \$85 million from IPO company, US-based Reva Medical.

A number of companies continued to rely on convertible note finance, however, a select handful were successful in raising significant funds from placements tied in with SPPs

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 - May '10)	49.2%
Year 10 (May '10 - Current)	28.0%
Cumulative Gain	271%
Av Annual Gain (9 yrs)	18.5%

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

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 9348 9317
Email: pachacz@bioshares.com.au

Individual Subscriptions (48 issues/year)
\$350 (Inc. GST)
Edition Number 391 (6 January 2010)
ISSN 1443-850X

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Bioshares

6 January 2011
Edition 391

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

Quarterly Review

Transformational Deals Drive 20% Gain in Bioshares Index

The **Bioshares Index** recorded a 19.3% gain in the December quarter, 2010, compared to an 8.4% increase for the **Nasdaq Biotech Index** and an 8.7% for the **Bioshares Large Cap Index**. Over 2010, the Bioshares Index posted a 3.1% gain.

More than half the change in the Bioshares Index can be attributed to significant developments with **Mesoblast** (MSB: \$4.54). The company finalised its merger with **Angioblast Systems**, in which it held a 32.8% stake, and brought on board **Cephalon** as a licensee for several programs and as an equity investor, with that company holding an initial 12% stake through a prior acquisition of Angioblast shares. Cephalon's stake is expected to increase to 19.9% once shareholder approval has been obtained.

At the close of the December quarter, Mesoblast was capitalised at \$1.19 billion, with its share price appreciating 82% in the quarter and 243% over the 12 months ending December 31, 2010.

Outside of the four stocks that comprise the Bioshares Large Cap Index (CSL, Cochlear, Resmed and Sigma Pharmaceuticals), the Australian listed life science sector was home to 20 companies capitalised at greater than \$100 million. Although this figure is largely in line with the 19 recorded a year ago, the aggregate capitalisation of these twenty stocks was \$7.2 billion whereas the aggregate capitalisation of the 19 companies from a year ago was \$5.3 billion.

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Biotech Sector KPIs

	2010	2009	2008	2007
No. of companies (31/12)	113	114	129	132
Biotechs >\$100M cap*	20	19	9	25
Bioshares Index (change)	3.1%	102.2%	-60.0%	-14.2%
Nasdaq Biotech Index	15.0%	0.5%	-9.1%	4.6%
Capital raised (\$M)	\$554	\$672	\$183	\$943
IPOs (Num)	2	0	3	11
Ave IPO raise (\$M)	\$46	\$0	\$5	\$17
CEO Separations	15	20	19	23

* excludes CSL, COH, RMD, SIP

The 7th **Bioshares Biotech Summit**
July 22-23, 2011 · Queenstown · New Zealand
The Essential Australian Biotech Investment Event

(More details on page 4)

After Mesoblast the next four stocks in order of capitalisation were **Heartware International** (\$1.18 billion), **Pharmaxis** (\$674 million), **Acrux** (\$588 million) and **Blackmores** (\$467 million). A full listing of stocks can be found commencing on page 7.

Heartware, Pharmaxis and Acrux also made significant contributions to growth in Bioshares Index in the December quarter. Heartware completed a pivotal bridge-to-transplant trial of its heart assist device and filed the device for approval with the FDA.

Although Pharmaxis received a setback earlier in the year when it appeared that it had narrowly missed an endpoint for its second Phase III trial of Bronchitol in cystic fibrosis patients, the company rebounded as greater clarity emerged concerning the selection and base-lining of trial measurement points. Progress towards a European marketing authorisation also aided the stock, which despite being expected for Q4 2010 has been delayed and is now anticipated in Q1 2011.

Acrux galvanised interest in the sector when its transdermally delivered testosterone product, Axiron, was approved by the FDA in November. Acrux added further support when it announced the expected payment of an historic dividend of around 60 cents at its AGM in December.

Capital Raisings

The contrast between the capital raising climate in the September quarter and the December quarter just concluded could not be more stark. Following \$17.5 million being raised by ASX listed life science firms in the September quarter, \$375 million was raised in the December quarter. The bulk of these funds was \$144 million of

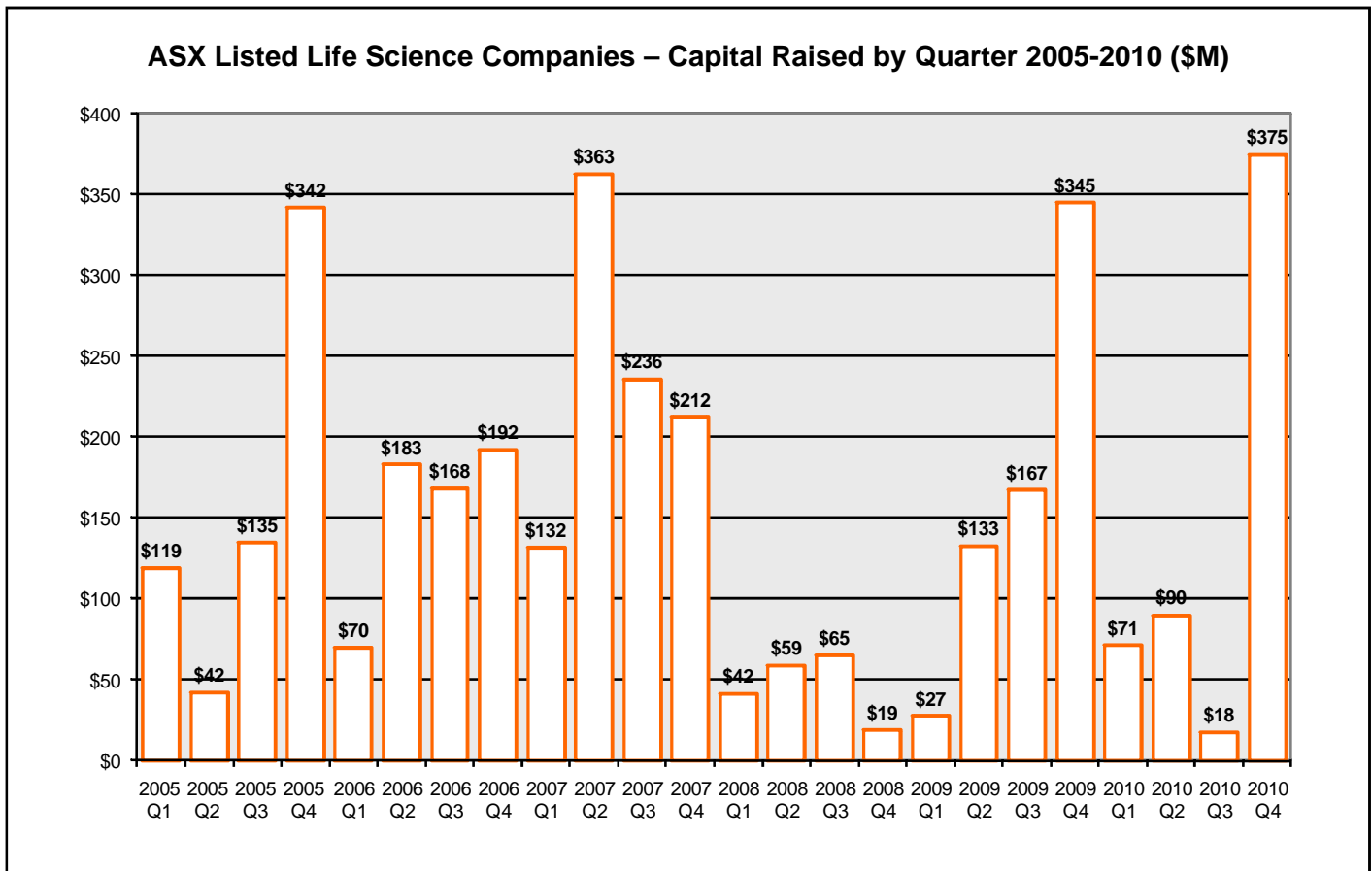
convertible note finance raised by Heartware International. However, needle manufacturer **Unilife** raised \$36 million through a placement and a share purchase plan and **QRxPharma** also raised \$23.8 million through a placement and SPP. **Sunshine Heart** similarly raised \$13.2 million.

ChemGenex secured a \$15 million convertible note from **Cephalon**, which if converted would give it a 9.6% stake. It also struck option agreements with two current shareholders to gain a further 19.9% stake. Should Cephalon increase its holding above 19.9% it would trigger a bid for the company.

A number of companies continued to draw down from convertible note funding arrangements, predominantly provided by **La Jolla Cove Investors** and **Springtree Special Opportunities Fund**. The most recent company to obtain convertible note funding was **Living Cell Technologies**, which announced a \$5.75 million agreement with Springtree SOF on December 31, 2010.

On a calendar year basis, \$554 million was raised by ASX -listed life science companies, compared to \$672 million in 2009. Placements accounted for \$192 million of capital raised, rights issues \$66 million, share purchase plans \$21 million and convertible note funding of \$177 million (including Heartware’s \$144 million).

Two IPOs were achieved in 2010, the first being **CBio** in the March quarter and the second being **Reva Medical** just before year’s end. Reva Medical has traded above its offer price of \$1.10, closing today at \$1.20. In contrast, CBio, developer of the X-Toll immunotherapy, has seen its share price fall 79% from its offer price.



Capital Raisings by Australian-listed Biotech Companies Q4 2010

	Company	Investment Manager or Investor	Type of raising	Funds raised (\$M)
1	Heartw are Int.		Convertible Note (CN)	\$143.75
2	Unilife		Placement	\$23.1
3	Unilife		SPP	\$12.8
4	ChemGenex Pharm.	Cephalon	CN	\$15.0
5	QRxPharma	RBS Morgans	Placement	\$14.00
6	QRxPharma	RBS Morgans	SPP	\$5.80
7	Sunshine Heart		Rights Issue (RI)	\$9.5
8	Sunshine Heart		Placement	\$3.7
9	Mesoblast	Southern Cross Equities/Lodge Partners	Placement (Bal of May \$37 M raising)	\$12.0
10	Impedimed	WHTM/RBS Morgans	Placement	\$10.00
11	CBio	Baker Young	RI (u/w)	\$9.30
12	Tyrian Diagnostics	Patersons Securities	RI (u/w)	\$4.00
13	Patrys	WHTM & Lodge Partners	Placement	\$3.80
14	Patrys	Advance Opportunities Fund	2% Equity Linked Redeemable Structured CN	\$0.22
15	Phylogica	Patersons Securities	RI (u/w)	\$3.48
16	OMI Holdings	Patersons Securities	Recapitalisation	\$2.29
17	Antisense Therapeutics	Patersons Securities	RI (u/w)	\$2.37
18	Karmelsonix		CN	\$2.00
19	Nusep	Stonebridge Securities	Placement	\$1.90
20	USCOM		Placement	\$1.88
21	Bioprospect	Novus Capital	RI (u/w)	\$1.65
22	Prima Biomed	Springtree Spec. Opp. Fund	Conv. Loan Funding (T15,T16)	\$1.40
23	Acuvax	RM Corporate Finance	Rights Issue	\$1.3
24	Flourotechnics		CN	\$0.5
25	Flourotechnics		Placement	\$0.2
26	Pharmaust		Placement	\$0.61
27	Actinogen		Rights Issue	\$0.52
28	Benitec	La Jolla Cove Investors	CN - part conversion	\$0.51
29	Agenix		Rights Issue	\$0.49
30	Neurodiscovery		Placement	\$0.43
31	Viralytics		CN - part conversion	\$0.42
32	Neuren Pharm.	Springtree Spec. Opp. Fund	Conv. Loan Funding (T6,T7,T8,T9)	\$0.36
33	Healthlinx	Springtree Spec. Opp. Fund	Conv. Loan Funding (T12,T13,T14)	\$0.30
			Total	\$289.6
			IPOs	\$85.0
	Total raised in Q4 2010			\$374.6
	Total raised in Q3 2010			\$17.5
	Total raised in Q2 2010			\$71.7
	Total raised in Q1 2010			\$90.0
	Total - 2010			\$553.8

Total IPOs in 2010

Company	Code	Funds Raised (M)	Issue Price	CMP	Gain/loss	First Traded
Cbio	CBZ	\$7.1	\$1.00	\$0.22	-79%	15/02/2010
Reva Medical	REL	\$85.0	\$1.10	\$1.20	9%	23/12/2010

The 7th Bioshares Biotech Summit

July 22-23, 2011 · Queenstown · New Zealand

The Essential Australian Biotech Investment Event



Registration & travel

Registration for this event will open in March. Direct flights are available to Queenstown from the east coast of Australia during the winter season. And shortly we will be opening accommodation packages at the conference facility at the Rydges Hotel, where delegates can secure deluxe suites (with the above view) for NZ\$175 per night (AD\$135).

The 7th annual Bioshares Biotech Summit will be held in the picturesque location of Queenstown, New Zealand, this year on July 22-23. For the past six years, this event has brought together the leading investment and biotech managers to discuss the key issues involving the Australian biotechnology sector.

The Bioshares Biotech Summit is built around an intense and highly relevant two-day conference program. It is also one of the best high-level networking events on the Australian biotech calendar. The conference is well attended by biotech CEOs, directors and senior managers, biotech investment managers, venture capital groups, analysts and stockbrokers. The conference is also highly relevant to international investment groups seeking to increase their exposure to the Australian biotech sector.

With a number of Australian biotech companies enjoying stunning success and moving through a transformational period, the conference promises to be a not-to-miss event, where reasons for such success are discussed and examined.

And once the conference is over, delegates may want to take the time to further enjoy the magnificent attractions of Queenstown. We look forward to seeing you there!

www.bioshares.com.au

In association with



Bioshares 2011 Top 10 Picks

In the next edition of Bioshares, to be released on Monday 17 January, we will list our Top 10 Picks for the year ahead.

Selected Clinical Trial Developments - Dec Quarter 2010

Company	Code	Product/Therapeutic	Event
ASDM	AMT	PAD Device (reperfusion of limbs)	Released interim report on 5 pts (40 pt trial), all discharged from hospital showing significant improvement in blood flow and reduction in chronic pain
Biotron	BIT	BIT225 (HCV)	Commenced Phase IIa trial; 24 pts. In combination with ribavarin.
Eastland Medical Systems	EMS	Artimist (sub-lingual spray) (malaria)	Dosing in trial commenced in Rwanda; 150pts
Healthlinx	HTX	Ovplex (ovarian cancer diagnostic)	Analysis of Pt 1 (500 samples) of international study showed 15% superiority over CA125 in detecting early stage ovarian cancer. Total samples = 1150.
Heartware	HIN	VAD (heart assist device)	Announced 92% pts met endpoint in pivotal bridge-to-transplant trial, 140 pts.
Mayne Pharma Group	MYX	SUBACAP (itraconazole)	Completed US based Phase II in 175 pts with localised infection of the toenail. Drug was shown to be non-inferior to reference product.
Mesoblast	MSB	Neofuse (allogeneic mesenchymal precursor stem cells)	Announced interim results of 24 pt Phase II Lumbar Fusion trial; 90% of 17 pts achieved successful bone bridging.
Patrys	PAB	PAT-SM6 (natural human antibody targeting GRP78; melanoma)	Completed treatment of first group of 3 melanoma pts in Phase I trial 10 pts; no safety issues observed or reported.
Pharmaxis	PXS	ASM8 (antisense compound; asthma)	Enrolled first pts in Phase II trial of patients with allergic asthma.
Pharmaxis	PXS	Bronchitol (cystic fibrosis)	Announced results of open label component its second Phase III trial; Lung function improved by 8.2% for study group and 6.3% for control group (which switched to Bronchitol). 260 pts in OL phase, with 242 completing.
Pharmaxis	PXS	Bronchitol (cystic fibrosis)	Announced combined results of the six month components of two Phase III trials; Lung function improved by 7.3% cf to baseline; 642 pts.
Progen Pharmaceuticals	PGL	PG545 (anticancer compound)	Cleared all formal approvals and requirements to commence Phase I trial (25 advanced cancer pts) at Sir Charles Gairdner Hospital, Perth.
QRxPharma	QRX	MoxDuo IR (moderate to severe pain)	Completed enrollment in Phase III study (Study 009); 141 pts undergoing knee replacement surgery.
Universal Biosensors	UBI	PT/INR strip and meter system	Comparative study with Roche's Coagucheck XS in 53 pts receiving warfarin and 16 non-recipients. High correlation between systems reported.

Clinical and Other Developments

As mentioned previously, **Heartware** completed its bridge-to-transplant trial of heart assist device, with 92% of patients meeting the endpoint which was defined as the patient being alive on the originally implanted device, transplanted or explanted for recovery at 180 days.

Pharmaxis released six-month data combined from its two Phase III cystic fibrosis trials, showing that its mucolytic therapy improved lung function by 7.3% compared to baseline.

Perhaps more significantly, 52-week data from Pharmaxis second Phase III trial showed an 8.2% improvement in the Bronchitol arm of the trial, indicating that Bronchitol could potentially contribute over the longer term to changing the course of the disease.

Pharmaxis' Aridol lung function test received approval by the FDA in the December quarter.

Mayne Pharma Group (formerly Halcyon Pharmaceuticals) completed a Phase II trial of SUBACAP (SUBA-itraconazole) in patients with fungal infection of the toenail. Mayne Pharma also submitted a marketing authorisation application for SUBACAP with the EMA (Europe). First sales of SUBACAP may commence in Europe in 2012.

Universal Biosensors completed a study that compared its prothrombin time test (strip and meter), which measures the clotting tendency of blood, to **Roche's** Coagucheck XS system reporting a high correlation between the systems as well as demonstrating reproducibility of the results using the UBI system.

Biota's co-development and Asian marketing partner for Inavir, a long acting neuraminidase inhibitor, **Daiichi Sankyo**, launched Inavir in Japan in October, announcing a target of supplying 2 million units by the end of December and 4 million units by the end of March 2011. The product is priced at a 30% premium to Relenza and Tamiflu.

Phylogica signed a licensing and collaboration deal with **Pfizer**, its third such deal in a 12 month period. Phylogica holds a large library of drug-like peptides sourced from nature. Pfizer is looking for candidates that could be applied to the field of vaccine development.

On a negative note, **pSvida** received a Complete Response letter regarding its New Drug Application for Iluvien, a depot injection product for treating diabetic macular edema. The FDA asked that analyses of safety and efficacy data through to month 36 of the FAME study be provided. pSvida had submitted data to 24-month

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Bioshares Model Portfolio (6 Jan 2011)

Company	Price (current)	Price added to portfolio	Date added
Phylogica	\$0.073	\$0.053	September 2010
Sunshine Heart	\$0.037	\$0.036	June 2010
Biota Holdings	\$1.05	\$1.09	May 2010
Tissue Therapies	\$0.70	\$0.21	January 2010
QRxPharma	\$1.420	\$0.25	December 2008
Hexima	\$0.32	\$0.60	October 2008
Atcor Medical	\$0.10	\$0.10	October 2008
Impedimed	\$0.78	\$0.70	August 2008
Circadian Technologies	\$0.60	\$1.03	February 2008
Patrys	\$0.100	\$0.50	December 2007
Bionomics	\$0.32	\$0.42	December 2007
Cogstate	\$0.24	\$0.13	November 2007
Sirtex Medical	\$6.12	\$3.90	October 2007
Clinuvel Pharmaceuticals	\$2.14	\$6.60	September 2007
Starpharma Holdings	\$0.83	\$0.37	August 2007
Pharmaxis	\$3.00	\$3.15	August 2007
Universal Biosensors	\$1.51	\$1.23	June 2007
Acrux	\$3.53	\$0.83	November 2004
Alchemia	\$0.64	\$0.67	May 2004

Note CUV 10 for 1 share consolidation

Portfolio Changes – 6 January 2011

IN:
No changes.

OUT:
No changes.

point and was in the process of preparing the 36-month analyses. The FDA also commented on deficiencies observed at two of pSvida's contract manufacturers.

Viralytics, which is developing CAVATAK, an oncolytic virotherapy, also received a setback in its goal of obtaining an approval for an IND with the US FDA. The FDA intends to lodge further questions for Viralytics to address.

One stock that had a stellar run in the December quarter was **Tissue Therapies**, which saw its stock increase by 206%, capitalising the company at just under \$100 million. This was driven by expectations of a deal being signed with a commercial partner for the company's wound healing compound VitroGro. However, the start of UK trial involving 40 patients appears to have been pushed back due to bad weather.

Re-capitalisations and Back-door Listings

Several companies have been re-capitalised or are in the process of being re-capitalised, with, in some cases, new assets and management being brought in to direct the re-formed.

OMI Holdings, a medical device developer, has been re-capitalised but will focus solely on the development of its safety needle.

New board members have been appointed at **Select Vaccines** and **Fluorotechnics**, although new business assets have yet to be acquired.

Helicon Group has acquired **Leading Edge Technologies**, a company in possession of a novel vibrating needle technology (see *Bioshares* 390) and a nasal dilation product.

Although occurring in the previous quarter it is worth noting that Acquacarotene (now Leaf Energy) merged with plant bio-technologies company **Farmacule Bioindustries**. The company is seeking to use plant based manufacturing systems to produce materials proteins for scientific research and industrial applications.

Bioshares

The Australian Listed Life Sciences Sector

December 31, 2010: Capitalisation \$39 billion, 113 companies

Bioshares Large Cap. Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
Cochlear	COH	4,557	Manufactures cochlear hearing implants	14%	16%	\$80.41
CSL	CSL	19,666	Manufactures pharmaceutical products including vaccines and human plasma fractions	10%	12%	\$36.29
Resmed Inc.	RMD	5,265	Manufactures diagnostic and treatment equipment for sleeping disordered breathing	3%	18%	\$3.49
Sigma Pharmaceuticals	SIP	471	Pharmaceutical manufacturing and wholesaling	-17%	-60%	\$0.40

Capitalisation Total 29,959

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
Mesoblast	MSB	1,185	Developing therapies based on mesenchymal pre-cursor stem cells, with applications in cartilage regrowth and heart and bone repair.	82%	243%	\$4.67
Heartware International	HIN	1,180	Developing a mechanical heart pump (LVAD)	16%	108%	\$2.43
Pharmaxis	PXS	674	Marketing a lung function test, Aridol, and developing the Bronchitol product to treat cystic fibrosis, bronchiectasis and COPD.	37%	10%	\$2.98
Acruz	ACR	588	Developer of the transdermal drug products Axiron and Evamist	48%	62%	\$3.54
Blackmores	BKL	467	Manufactures vitamin, mineral and herbal supplements and skin & hair products in Australia and N.Z.	-1%	34%	\$28.00
Reva Medical	RVA	405	Developing a bioresorbable coronary stent. Listed on Dec 23, 2010.	13%		\$1.24
Sirtex Medical	SRX	338	The company's core technology uses radioactive particles to irradiate tumours in the liver. Approved for use in most major regions.	24%	-20%	\$6.05
Unilife Corporation	UNS	323	Developer of retractable syringes	-16%	-3%	\$0.88
Universal Biosensors	UBI	241	Development, manufacture and commercialisation of a range of in vitro diagnostic tests for point-of-care use	5%	-18%	\$1.52
Cellestis	CST	240	Marketing a diagnostic for latent tuberculosis	6%	-24%	\$2.50
API	API	215	Pharmaceutical wholesaler	-15%	-36%	\$0.44
Starpharma Holdings	SPL	202	Developer of pharmaceutical applications of chemical scaffolds known as 'dendrimers'.	49%	20%	\$0.84
Nanosonics	NAN	198	Developing a novel disinfection technology, the first product is a point of care ultrasound probe disinfection unit	10%	32%	\$0.87

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
Biota	BTA	179	Developer of anti-infective drugs, including the flu drug Relenza. Inavir, developed with Daiichi Sankyo, a long acting flu drug now approved in Japan.	4%	-59%	\$0.99
QRxPharma	QRX	176	Developing a 'dual opioid' drug to treat moderate to severe pain.	40%	79%	\$1.40
ChemGenex Pharmaceuticals	CXS	129	Developer of the drug Omacetaxine, which has potential to treat CML patients that develop the T315i mutation.	34%	-54%	\$0.46
Prima Biomed	PRR	127	Developing the CVac immunotherapy.	70%	13%	\$0.17
Impedimed	IPD	122	Develops devices that aid the diagnosis of secondary lymphoedema, muscle wasting and other disorders	1%	4%	\$0.81
Alchemia	ACL	121	Commercialising new solid phase carbohydrate synthesis technology	30%	-13%	\$0.63
Mayne Pharma Group	MYX	106	Developing an improved dosing anti-fungal drug, Subazole and operating manufacturing services	19%	7%	\$0.71
Tissue Therapies	TIS	100	Developing the VitroGro product for ulcer and wound healing	206%	350%	\$0.72
Bionomics	BNO	99	Developing drugs to treat cancer and CNS diseases, and has also developed a gene diagnostic for epilepsy.	13%	-17%	\$0.31
Ascent PharmaHealth	APH	92	A generic pharmaceutical manufacturer and distributor. Strides ArcoLabs intends to buy out minority shareholders.	28%	76%	\$0.37
pSiVida	PVA	87	Developing drug delivery technologies, with a special focus on ophthalmic applications	-4%	11%	\$4.72
Phosphagenics	POH	74	Commercialising a drug delivery technology improving the delivery of vitamin E and existing pharmaceutical products through phosphorylation.	29%	76%	\$0.10
Scigen	SIE	72	Developer and manufacturer of biopharmaceuticals. Company is based in Singapore and was spun out of Sonic Healthcare in 2002.	-26%	-63%	\$0.13
Clovercorp	CLV	64	Development and production of omega-3 food additives from tuna oil.	13%	59%	\$0.39
Clinuvel Pharmaceuticals	CUV	63	Developing an analogue of the alpha-MSH protein, named Scenesse, as a photo-protective agent	1%	-23%	\$2.07
Anteo Diagnostics	ADO	57	Developer of a biological coatings technology that can be applied to immunoassays, bio-separations, drug delivery and other medical devices	67%	1114%	\$0.09
Cordlife	CBB	45	Rolling out tissue banking services in Australia and Asia	-5%	-45%	\$0.31
Solagran	SLA	40	Developing complementary medical compounds called Bioeffectives.	-10%	-46%	\$0.14

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
CathRx	CXD	40	Developing novel modular cardiac catheters for the diagnosis and treatment of abnormal heart rhythms	2%	-55%	\$0.28
Somnomed	SOM	40	Commercialising an oral device for the treatment of sleep apnea and snoring.	4%	14%	\$0.98
Living Cell Technologies	LCT	38	Developing cell therapies for diabetes, haemophilia and Huntington's disease	-23%	-39%	\$0.14
Sunshine Heart	SHC	36	Developing the C-Pulse heart assist device. The C-Pulse wraps around and compresses the aorta, increasing blood flow through the body.	20%	-5%	\$0.04
Probiotec	PBP	35	Manufacturer, marketer and distributor of a range of over the counter (OTC) pharmaceuticals, complementary medicines and speciality ingredients	-29%	-73%	\$0.67
Avexa	AVX	33	Programs suspended. Direction of company being debated by shareholders.	26%	-75%	\$0.04
Cbio	CBZ	31	Drug development company, focus is on Xtoll product for rheumatoid arthritis	23%	0%	\$0.22
Compumedics	CMP	31	Develops, manufactures and markets sleep diagnostic and monitoring equipment.	36%	6%	\$0.19
Prana Biotechnology	PBT	30	Developing drugs to treat CNS diseases such as Alzheimer's and Parkinson's	0%	-17%	\$0.13
Genera Biosystems	GBI	28	Develops, manufactures and distributes advanced molecular diagnostic tests, with a particular focus on women's health.	2%	-43%	\$0.45
Hexima	HXL	28	Research and development of genetic technologies that can enhance the resistance of crops to insects and fungal pathogens.	32%	-27%	\$0.35
Circadian Technologies	CIR	26	Developing drugs, including antibodies, around the VEGF C and VEGF D targets	2%	-19%	\$0.57
OBJ	OBJ	26	Developing transdermal drug delivery technologies	-12%	-21%	\$0.02
Institute of Drug Technology	IDT	26	Manufacturer of pharmaceutical ingredients to international standards for major pharmaceutical groups.	0%	-57%	\$0.60
Ellex Medical Lasers	ELX	26	Develops, manufactures and markets solid state ophthalmic lasers used to treat secondary cataracts and retinal disorders.	-8%	69%	\$0.31
Southern Dental Industries	SDI	24	Manufacture & distribution of amalgam (fillings) & other dental materials and product R&D.	0%	-30%	\$0.20
Patrys	PAB	23	Developing human antibody therapies for the treatment of lung, pancreatic, gastric and colon cancers	29%	-22%	\$0.10
Eastland Medical Systems	EMS	23	Developing the anti-malarial product ArTiMist.	13%	-32%	\$0.05

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
Immuron	IMC	21	Specialises in R&D of hyper-immune bovine colostrum products for therapeutic use in animals and humans.	-21%	-20%	\$0.07
Asian Ctr for Liver Diseases and Transpl.	AJJ	21	Manages liver treatment centres in Asia. Not previously included in these tables. Made a backdoor listing through Costarella Design in 2009.	22%	5%	\$0.11
Medical Developments	MVP	21	Commercialising the Penthrax inhaler for temporary pain relief. Used widely in ambulances across Australia.	54%	135%	\$0.40
Brain Resource Corp	BRC	18	Development and commercialisation of functional brain analysis techniques	-5%	-33%	\$0.20
Viralytics	VLA	18	Developing a cancer treatment based on the application of viruses (oncolytic virus technology)	0%	-11%	\$0.03
Phylogica	PYC	18	Developing peptide compound libraries for use in human therapeutics.	25%	-53%	\$0.06
Agenix	AGX	17	Reinstated 10-9-2010. Developing a compound to treat Hepatitis B, AGX1009. Also seeking a partner in China to develop Thromboview, an imaging agent.	-27%		\$0.02
Progen Pharmaceuticals	PGL	17	A developer of cancer therapeutics	-20%	-49%	\$0.28
Cogstate	CGS	16	Marketing cognitive performance diagnostic products	-10%	-25%	\$0.24
KarmelSonix	KSX	15	Respiratory and pulmonary devices company	62%	-45%	\$0.02
Biodiem	BDM	15	Focused on the development of LAIV influenza vaccines	4%	-37%	\$0.15
Biotron	BIT	15	Developing a compound to treat HCV	88%	26%	\$0.12
USCOM	UCM	14	Marketing a non-invasive heart output function monitor	-8%	-58%	\$0.30
Cyclopharm	CYC	14	A nuclear medicine company that markets the Technegas lung imaging system	21%	-26%	\$0.08
NuSep Holdings	NSP	14	Manufacture and sale of protein separations technologies	-4%	-13%	\$0.23
Vita Life Sciences	VSC	14	Development, manufacture and distribution of prescription and OTC medicines as well as complementary and alternative medicines, dietary supplements and health foods	32%	14%	\$0.25
Genetic Technologies	GTG	13	Provides DNA paternity testing services and holds broad patents relating to the use of non-coding DNA.	27%	-21%	\$0.03
Atcor Medical	ACG	12	Markets the SphygmoCor device, a noninvasive technology that provides information regarding the functioning of the cardiovascular system	-23%	-50%	\$0.09

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
Avita Medical	AVH	12	Markets ReCell, a skin repair product	10%	-33%	\$0.11
Novogen	NRT	12	Developing analogues of naturally occurring phenolic hormones to treat cancers and other conditions.	-4%	-80%	\$0.12
Advanced Surgical Design & Manufacture	AMT	12	A developer and manufacturer of prosthetic implants and medical devices	-7%	-43%	\$0.35
Healthlinx	HTX	12	Detecting novel functions of known and new protein and peptides for therapeutic purposes.	-6%	-10%	\$0.08
Benitec	BLT	12	R&D company focusing on gene silencing, specifically DNA delivered RNAi, technology	-38%	-34%	\$0.03
Analytica	ALT	11	A medical devices company that has developed a retractable syringe	18%	-33%	\$0.03
ITL	ITD	10	Develops and distributes medical devices such as safety equipment to prevent needle stick injuries and sterile preparation kits.	58%	0%	\$0.08
Cellmid	CDY	10	Developing therapies that target the midkine protein. Recently launched a range of hair loss products.	50%	-12%	\$0.03
Stirling Products	STI	10	Development of a drug inhalation platform and involved in telemedicine	-22%	-50%	\$0.01
BioProspect	BPO	10	Developing insecticides from naturally occurring molecules	0%	-74%	\$0.01
Optiscan Imaging	OIL	10	Manufacture of confocal microscopes for clinical diagnosis	68%	-11%	\$0.07
Calzada	CZD	9	Holds a 100 % stake in PolyNovo, a polymer chemistry company.	8%	-13%	\$0.03
Imugene	IMU	8	Developing animal products such as antibiotic alternatives used in the stock feed industry using a vaccine and gene therapy approach	-39%	-38%	\$0.06
Austofix	AYX	8	Manufacturer and developer of orthopaedic fixation devices	-37%	-52%	\$0.60
Resonance Health	RHT	8	Marketing the FerriScan technology, a non-invasive tool for measuring liver iron levels	31%	-25%	\$0.02
Helicon Group	HCG	7	Has acquired Leading Edge Instruments , which is developing a novel vibrating needle technology and a nasal dilation product.	114%	0%	\$0.03
Tyrian Diagnostics	TDX	7	Developer of diagnostic products, including the ReadRite-Alpha Amylase test (a wheat quality test)	-50%	-56%	\$0.01
Neuren Pharmaceuticals	NEU	7	Developing neuroprotective therapeutics	-6%	-57%	\$0.02

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
Select Vaccines	SLT	7	Vaccine assets sold and is seeking new business	50%	-14%	\$0.006
LBT Innovations	LBT	6	Developed the MicroStreak technology for the automation of microbiology laboratory processing	-26%	-46%	\$0.07
Antisense Therapeutics	ANP	6	Developing antisense compounds to treat multiple sclerosis and acromegaly	-50%	-87%	\$0.01
PharmAust	PAA	6	Operates Epichem and PharmAust, which provide products and services to biotech and pharma companies. Holds oil and gas investments.	18%	-55%	\$0.02
Holista Colltech	HCT	6	Has developed a novel technology for the extraction of collagen from sheepskins	10%	-24%	\$0.11
IM Medical	IMI	6	Manages imaging facilities	0%	-67%	\$0.00
Cryosite	CTE	5	Provides specialised storage services, especially for umbilical cord blood	10%	-27%	\$0.11
Medigard	MGZ	5	Developed retractable syringe technology and other safety medical products.	6%	-45%	\$0.06
Medical Australia	MLA	5	Manufacture and supply of medical devices and equipment. Not previously included in these tables. Previously known as BMDI Tuta and IMD Group	-19%	-58%	\$0.01
Virax Holdings	VHL	5	Developing a therapeutic and prophylactic vaccine for HIV	-10%	-51%	\$0.03
Acuvax	ACU	5	Holds interests in various therapeutics and vaccines	0%	-82%	\$0.003
Bone Medical	BNE	5	Developing treatments for bone and joint degenerative diseases such as arthritis and osteoporosis.	-24%	-69%	\$0.04
NeuroDiscovery	NDL	4	Focusing on pain drug development following pending management buyout of electrophysiology business	43%	23%	\$0.04
OMI Holdings	OMI	4	Reinstated 5-11-2010. Commercialising a safety syringe.	-85%		\$0.01
BioMD	BOD	4	Developing a tissue engineering technology, termed ADAPT	43%	-29%	\$0.03
Leaf Energy	LER	4	Merged with Farmacule BioIndustries (11-8-2010), a plant genetic technologies business; divested algae farm assets. 1:20- reconstruction 9-6-2010.	-31%		\$0.13
Giaconda	GIA	4	Developed novel (patented) combinations of registered drugs for the treatment of gastrointestinal disorders.	64%	-4%	\$0.05
Probiomics	PCC	3	Proprietary ownership of a unique probiotic strain	0%	-55%	\$0.01

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
Actinogen	ACW	3	Early stage developer of antibiotics that show activity against MRSA and VRE bacteria	-45%	20%	\$0.06
Atos Wellness	ATW	2	Suspended from quotation. Business under review.	0%	-20%	\$0.01
Fluorotechnics	FLS	2	Suspended from quotation. Reviewing investment opportunities in the bioscience industry.	0%	-91%	\$0.04
Teleso Technologies	TEO	1	Investigating new business activities	120%	-37%	\$0.02
Genesis Research & Development Corp.	GEN	1	Operations suspended	0%	-62%	\$0.02
Capitalisation Total		9,118				

Listed Biotech Investment Funds or Companies

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/12/10
Biotech Capital	BTC	10	The entity is now engaged in the orderly sale of assets.	57%	-53%	\$0.14
Capitalisation Total		10				
Capitalisation Total - All Indexes		39,088				

Note:

New Listing: RVA

Reinstated: OMI

Removed: BPH, XCD

Additions - not previously included: AJJ, MLA

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 positions, *Bioshares* grades them according to relative risk within that group, to better reflect the very large spread of risk within those stocks. For both groups, the rating “**Take Profits**” means that investors may re-weight their holding by selling between 25%-75% of a stock.

Group A

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

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

Group B

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

Speculative Buy – Class A

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

Speculative Buy – Class B

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

Speculative Buy – Class C

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

Speculative Hold – Class A or B or C

Sell

Corporate Subscribers: Pharmaxis, Starpharma Holdings, Cogstate, Bionomics, ChemGenex Pharmaceuticals, Circadian Technologies, Biota Holdings, Halcygen Pharmaceuticals, Impedimed, QRxPharma, Patrys, LBT Innovations, Hexima, Mesoblast, Atcor Medical, BioMD, Tissue Therapies, Viralytics, Phosphagenics, Immuron

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