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Companies covered: Quarterly Review, ANP

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	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)	-35.8%
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 - May '14)	26.6%
Year 14 (May '14 - May '15)	23.0%
Year 15 (May '15 - May '16)	33.0%
Year 16 (May '16 - May '17)	16.8%
Year 17 (May '17 - May '18)	-7.1%
Year 18 (May '18 - May '19)	-2.3%
Year 19 (May '19 - May '20)	39.5%
Year 20 (May '20 - May '21)	86.8%
Year 21 (May '21 - Current)	9.6%
Cumulative Gain	2129%
Av. Annual gain (20 yrs)	20.7%

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Bioshares

13 July 2021 Edition 897

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

Biotech Stock Demand Settles in June Quarter

Following some very strong sector gains since April last year, some profit taking has occurred in the small-medium cap biotechs with the Bioshares Index down 5.5% for the June quarter. Conversely large cap stocks in the sector, which now also includes Telix Pharmaceuticals, Mesoblast, Imugene and Clinuvel Pharmaceuticals, has seen a 12.9% increase over the quarter.

After two positive quarters, the Bioshares Botanicals Index was down 15.8% for the quarter, , with the Nasdaq Biotech Index up 9%. The ASX 300 index was up 7.9% for the quarter and up 27% over the last nine months. Over the last year the Bioshares Index was up 22% with the Large Cap Index up just 6.1%.

In the large cap index, there are now 10 companies with a market value in excess of \$1 billion.

Capital Raisings

Biotechs had taken the opportunity to strengthen their balance sheets across the previous four quarters, with \$2.2 billion in funds to 31 March this year. In the June quarter, just \$224 million was raised by ASX listed biotechs, with exactly half of that through IPOs.

There were four IPOs during the quarter, with the largest by Trajan Group Holdings, raising \$90 million. The other three listings were by HitIQ, Island Pharmaceuticals and Argenica Therapeutics, each raising between \$7-\$8 million. The four IPOs delivered an average gain from their listing price of 14%.

HitIQ has developed a sports mouthguard that includes sensors that can assist in monitoring sports-related concussion injuries. Island Pharmaceuticals is a drug re-purposing play that is developing novel antiviral drugs. Argenica Therapeutics is seeking to develop compounds to prevent brain injury following stroke. And Trajan manufactures and sells scientific equipment used by the life sciences industry. The company expects to achieve revenue of \$75 million for FY2021.

	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021
	Q2 2020	QJ 2020	Q7 2020	Q12021	QL LULI
Bioshares Index	36.7%	15.3%	-0.6%	7.3%	-5.5%
Bioshares Large Cap Index	0.2%	-2.9%	2.4%	-6.1%	12.9%
Bioshares Botanicals Index	12.9%	-7.3%	40.6%	4.2%	-15.8%
Nasdaq Biotech Index	26.7%	-0.9%	11.8%	-0.7%	9.0%
ASX 300 Index	14.6%	-1.5%	12.1%	4.6%	7.9%

Note: IMU, TLX, CUV and MSB have been added to the Large Cap Index

2021 Bioshares Biotech Summit 7-8 September Albury NSW



September 7 – 8, 2021 · Albury · NSW The Essential Australian Biotech Investment Event



SPONSORS



Registration for this year's **Bioshares Biotech Summit** is now open. For full details please visit our website (www.bioshares.com.au)

We are delighted that this year's event has gained support from the following sponsors: **FB Rice**, **Telix Pharmaceuticals** and **Avatar Brokers**. An initial speaker list is provided below. We hope you can join us.

Note, if travel restrictions are ongoing at the time of the event, the Summit will be rescheduled for the next available opportunity. Full credit will be provided towards a future Summit.

Megan Baldwin, CEO of Opthea

Stuart Elliott, Co-CEO of Planet Innovation

Peter Rowland, CEO of Micro-X

Kate Quirke, CEO of Alcidion

Sam Lanyon, Exec Chair of Lumos Diagnostics

Nina Webster, CEO of Dimerix

Chris Behrenbruch, CEO of Telix Pharmaceuticals

Jenni Pilcher, CFO of Mach7

Neil Verdil-Austin, CEO of Somnomed

Malcolm Hebblewhite, CEO of Atmo Biosciences

Brad O'Connor, CEO of Cogstate

Tim Oldham, CEO of Adalta

Mark Diamond, CEO of Antisense Therapeutics

Steven Gourlay, CEO of Actinogen Medical

Richard Jagger, CEO of Bio-Gene

Jon Pilcher, MD of Neuren Pharmaceuticals

Chris Baldwin, Deputy CEO of Exopharm

Michael Johnson, CEO of Rhinomed

Company	Code	Life Science Companies, Q2 2021 Investment Manager or Investor	Type of Raising	Funds Raised (\$M)	Share price
Alcidion	ALC	Henslow / Bell Potter Securities	Placement	\$15.4	\$0.32
Immutep	IMM	Bell Potter Securities / Jefferies (Aust)	Placement	\$13.7	\$0.52
AnteoTech	ADO	PAC Partners Securities	Placement	\$12.0	\$0.26
Oventus	OVN	Canaccord Genuity / Bell Potter Securities	Rights issue & placement	\$10.0	\$0.12
Impedimed	IPD		Options exercised	\$8.2	
AnteoTech	ADO	-	SPP	\$8	\$0.26
ResApp Health	RAP	Evolution Capital Advisors	Placement	\$5.5	\$0.06
Race Oncology	RAC	Merchant Capital Partners / MST Financial Services	Placement	\$5.4	\$3.00
Medadvisor	MDR	Perennial Value Management	Placement	\$5.3	\$0.30
Pharmaxis	PXS	Bell Potter Securities	Placement	\$4.4	\$0.08
Analytica	ALT	180 Markets	Placement	\$3.8	\$0.35
Amplia	ATX	Taylor Collison	Placement	\$3.8	\$0.23
Stemcell United	SCU	Sanlam Private Wealth	Placement	\$3.8	\$0.019
Suda Pharm.	SUD	Baker Young	Placement	\$3.7	\$0.04
Alcidion	ALC	Henslow	SPP	\$3.0	\$0.32
Anteris Technology	AVR	Evolution Capital Advisors	Placement	\$2.3	\$7.50
Regeneus	RGS		Placement	\$1.5	
Vision Engineering	VTI		SPP	\$1.2	\$1.70
Jayex Healthcare	JTL	JP Equity Partners	Placement	\$0.6	\$0.030
POs					
Trajan Group Holdings	TRJ	Canaccord Genuity / Ord Minnett	IPO	\$90.0	\$1.70
HitlQ	HIQ	Shaw and Partners	IPO	\$7.7	\$0.20
Island Pharmaceuticals	ILA	PAC Partners Securities	IPO	\$7.5	\$0.25
Argenica Therapeutics	AGN	ACNS Capital Markets (Alto Capital)	IPO	\$7.0	\$0.20
otal raised in Q2 2021				\$224	

Capital Raisings by ASX-listed Life Science Companies, Q2 2021

TUTAL TAISEU ILL QZ 202

Total raised in Q1 2021

Total raised in Q4 2020

Total raised in Q3 2020

Total raised FY2021

\$585

\$634

\$387

\$1,830

Company	Code	Cap. \$m	Change - Quarter	Change - Year	Price 1/7/21
Actinogen Medical	ACW	208	221%	468%	\$0.13
Imugene	IMU	1,668	192%	1029%	\$0.35
Heramed	HMD	48	184%	216%	\$0.28
Prescient Therapeutics	PTX	147	109%	326%	\$0.23
Patrys	PAB	99	90%	358%	\$0.06
Universal Biosensors	UBI	160	76%	350%	\$0.90
Bioxyne	BXN	18	75%	180%	\$0.03
Cryosite	CTE	18	70%	200%	\$0.39
Suda Pharmaceuticals	SUD	34	52%	89%	\$0.07
Cogstate	CGS	238	50%	286%	\$1.39

Top 10 Sector Outperformers – June Qtr, 2021

Actinogen Medical was the best performing stock in the sector in the June quarter, up 221%. The company has installed a new CEO with a new approach to the next stage of trialling its Alzheimer's disease drug candidate. This involves keeping the dose at similar or lower levels but using more sensitive measures (Cogstate test battery). Previous data has shown very good binding to the target enzyme at even the low 5mg dose.

Imugene has climbed 192% for the quarter and 10-fold for the year. Interim data from the Phase II gastric cancer study with HER-Vaxx showed a 58% reduced risk of death compared to chemotherapy treatment alone. Imugene is now capitalised at \$1.7 billion.

Heramed, which sells a foetal heart rate monitor, achieved a 184% share price lift on little news, which included a pilot agreement with Obstetrix Medical Group that includes the procurement of 100 licenses to the Heramed technology. Oncology group Prescient Therapeutics was up 109%, also on little news flow. The company announced a new agreement with the Peter MacCallum Cancer Centre for a CAR-T program.

Oncology company Patrys was up 90% for the quarter with its technology being published in a peer-reviewed journal and animal PK studies completed on its two lead candidates. The company remains on track to commence human studies in 1H 2022 with its novel antibody that penetrates the blood-brain-barrier and penetrates the nucleus of cancer cells to destroy tumours by way of what is termed synthetic lethality.

Universal Biosensors was up 76% for the quarter and 350% for the year. The main news over the quarter was only the signing of multiple distribution deals for its Sentia wine tasting technology. Bioxyne was up 75% for the quarter with no news flow. Cryosite was similarly up 70% on no news flow.

Suda Pharmaceuticals was up 52% in the quarter. The company in-licensed an oncology cell therapy technology from Imperial College London.

Cognition company Cogstate was up 50% for the quarter following the approval of the first disease modifying treatment for Alzheimer's disease, Aduhelm. Aduhelm will be marketed by Biogen and Eisai. Last year Eisai signed a US\$45 million deal with Cogstate for Page 4

Top 10 Sector Underperformers – June Qtr, 2021

Company	Code	Cap. \$m	Change - Quarter	Change - Year	Price 1/7/21
Oventus	OVN	21	-52%	-66%	\$0.10
Respiri	RSH	51	-49%	-20%	\$0.07
BARD1 Life Sciences	BD1	155	-46%	7067%	\$1.94
Singular Health Group	SHG	33	-44%	60%	\$0.32
Anteris Technologies	AVR	49	-43%	43%	\$7.03
Jayex Healthcare	JTL	6	-42%	44%	\$0.03
Asian American Medical Group	AJJ	11	-40%	38%	\$0.03
ResApp Health	RAP	35	-40%	-77%	\$0.04
TALI Digital	TD1	28	-39%	20%	\$0.03
MGC Pharmaceuticals	MXC	86	-39%	90%	\$0.04

Oventus Medical's share price fell by 52% during the quarter with the company conducting a capital raise at a significant discount (27%) to its closing price before the raise. The company's large cash burn remains an issue for the company with cash receipts in the March quarter still low at only \$0.3 million.

Respiri shares were down 49% for the quarter after it made a takeover bid for Adherium. Investors in BARD1 Life Sciences have taken some profits in the June quarter. The stock was down 46% but still up seven-fold over the last 12 months. Singular Health Group was down 44% following shares being released from escrow in late March. The stock is still up 60% since listing in Q1 this year. Some profit taking also appears to have occurred with Anteris Technologies, with the stock down 43% for the quarter but still up 43% for the year.

Jayex Healthcare has been impacted by the continuing coronavirus pandemic, with the stock down 42% for the quarter but still up for the year (44%). MGC Pharmaceuticals was down 39% after announcing the acquisition of Israeli CRO MediCaNL for \$6 million (in a scrip deal).

Profit taking appears to have occurred with Asian American Medical Group and Tali Digital with both stocks down around 40% but still posting gains for the year. And ResApp Health was down 40% for the quarter and 77% for the year as it seeks to gain traction for its phone-based respiratory diagnostic and sleep diagnostic aid.

Outperformers cont'd

global rights to its cognitive test product. Following approval from the FDA for Aduhelm, the regulator has added the requirement for patients to be diagnosed with mild cognitive disease at the request of Biogen. This demand for Cogstate's test in screening for patients with early Alzheimer's disease can be expected to accelerate in the coming months once the test is launched in the US.

Strong gains with little or no news flow in several stocks in the June quarter indicate that a strong speculative biotech market is continuing in Australia.

Portfolio Changes -

13 July 2021

No changes

IN:

OUT: No changes

Bioshares Model Portfolio (13 July 2021)

Company	Code	Price (current)	Price added to portfolio	Recommend- ation	Cap'n (\$M)	Date added
Clinuvel Pharmaceuticals	CUV	\$27.66	\$20.31	Hold	\$1,367	November 2020
Opthea	OPT	\$1.315	\$0.160	Spec Buy A	\$457	November 2014
Immutep	IMM	\$0.535	\$0.320	Spec Buy A	\$360	March 2019
Cogstate	CGS	\$1.420	\$0.24	Spec Buy A	\$243	April 2019
Micro-X	MX1	\$0.325	\$0.38	Spec Buy A	\$149	May 2017
Cynata Therapeutics	CYP	\$0.500	\$0.70	Spec Buy B	\$72	December 2020
Patrys	PAB	\$0.055	\$0.013	Spec Hold B	\$99	July 2020
Dimerix	DXB	\$0.250	\$0.09	Spec Buy A	\$49	December 2018
Acrux	ACR	\$0.135	\$0.31	Spec Buy A	\$38	July 2017
Pharmaxis	PXS	\$0.084	\$0.260	Spec Buy B	\$38	December 2016
Adalta	1AD	\$0.140	\$0.07	Spec Buy B	\$34	May 2020
LBT Innovations	LBT	\$0.115	\$0.08	Spec Buy B	\$33	May 2021

Stocks Removed from Bioshares Portfolio in TTM

Date removed	Stock
June 2021	CYC
October 2020	RNO, SOM, VHT
August 2020	TLX

Selected Clinical Trial Developments - Q2 2021

Company	Code	Product/Application	Event
Clinuvel Pharm.	CUV	Afamelanotide	First patient treated post stroke
Avecho Biotechnology	AVE	Enhanced oral CBD	Ethics approval for Phase I study in healthy volunteers
Cynata Therapeutics	CYP	Adult stem cells for acute respiratory depression	First patient treated in 24 patient Phase I study
Nova Eye Medical	EYE	iTrack canaloplasty microcatheter	1st of 160 pts recruited
Imagion Biosystems	IBX	MagSense to detect spead of breast cancer	Phase I: 1st of 15 pts enrolled
Kazia Therapeutics	KZA	Paxalisib for primary CNS lymphoma	1st pt (of 25) enrolled in Phase II study
Noxopharm	NOX	Veonda to prevent cytokine storm in COVID-19	No rise in inflammatory biomarkers in 18 patients
PharmAust	PAA	Monepantel for canine B-cell lymphoma	Regression of tumour in one dog and stable disease or better in 6/15 dogs treated. Likely to progress to Phase III.
Pharmaxis	PXS	PXS-5505 for myelofibrosis Phase Ic	Good tolerability, consistent PK and inhibition of LOX and LOXL2
Rhythm Biosciences	RHY	ColoSTAT colorectal cancer test	Addition of lifestyle factors increased sensitivity to 88% with 95% specificity
Telix Pharm.	TLX	TLX250-CDx for renal cancer imaging in Japan	Phase I: good safety and tolerability demonstrated
Telix Pharma	TLX	TLX591 for advanced metastatic, castrate resistant prostate cancer	Phase III study commenced in Australia
Telix Pharma	TLX	TLX66 for bone marrow e conditioning	Therapy safe in pts with AL amyloidosis prior to stem cell transplant. All 9 pts successfully engrafted without chemotherapy.
Telix Pharma	TLX	TLX101 for glioblastoma	First 10 patients treated successfully as second line treatment. Therapy to progress into 1st line pts.
AusCann Group Holdings	AC8	CPAT-01 for treatment of pain and inflammation in dogs	Phase IIa: Imporved pain, lameness and mood

Antisense Therapeutics to Move into Pivotal Study in DMD

Antisense Therapeutics (ANP: \$0.215) is seeking to move into potentially a pivotal study with its lead drug candidate, ATL1102, for the treatment of boys with Duchenne muscular dystrophy (DMD), in either late 2021 or early 2022.

The trial is expected to recruit 108 boys with DMD with two doses to be assessed. One is expected to be 25mg per week, which is the same as the previous study in nine boys with DMD treated for 24 weeks. The second dose is expected to be higher and has yet to be selected and agreed upon with regulators. Patients will be treated for 12 months. The trial will be an open label study with a control arm that will receive standard-of-care treatment (corticosteroids).

ATL1102 works by inhibiting excessive T-cell responses in the body that cause inflammation and exacerbates the progression of DMD. In a study in nine boys with DMD conducted by Antisense at the Royal Children's Hospital in Melbourne, it was found that over the six-month treatment period, seven of the nine boys either showed an improvement or no worsening of strength as assessed by the PUL2.0 test with a mean gain in the score of 0.9 points. This compares to a 1.09 point loss that can be expected for this age group over the same period.

Another major finding was that fat levels in this group of nine boys treated with ALT1102 decreased over the six months of treatment by 0.5% where historically it can be expected to increase continuously, by around 3.9% over six months at that age.

It's likely that Antisense will achieve alignment between the EMA and the FDA on having the primary endpoint as changes in the PUL2.0 test, with the secondary endpoint being changes in the MyoSet test.

Most of the boys will likely receive corticosteroids in the forthcoming trial as the standard-of-care treatment, with eight of the nine boys in the previous study being on steroid treatment to reduce inflammation.

Manufacture of drug material for the Phase IIb clinical studies has been completed with finished product release testing underway. The trial in Europe will include multiple sites with a Principal Investigator to be named shortly.

Prior to starting the US study, Antisense will need to complete nine months of toxicology testing in non-human primates, however it can begin the study in the US and treat patients for up to six months before completing the toxicology study.

Spinraza Antisense Drug Generating US\$2 billion in Sales

One of the most successful antisense drugs, developed initially by Ionis Pharmaceuticals and licensed to Biogen, is the drug Spinraza for the treatment of spinal muscular atrophy. In 2020 the drug generated sales of US\$2 billion and is one of three antisense drugs on the market from Ionis. The Antisense Therapeutics' technology has also been licensed from Ionis.

Collaboration with MCRI

Last month Antisense Therapeutics announced a collaboration with the Murdoch Children's Research Institute. The work will investigate the potential of ATL1102 for immune-related muscle wasting diseases. This includes combining the drug candidate with existing drugs for DMD (such as eteplirsen from Sarepta) as well as in other muscle wasting diseases.

Summary

Antisense Therapeutics is capitalised at \$124 million and held cash of \$8.3 million at the end of March. Progression into a potentially pivotal study in the next six months will be a major milestone for the company. Encouraging early signs of efficacy in a Phase IIa study in DMD support further development for this program.

ATL1102 has become the company's lead asset with positive clinical data now in two indications (DMD and multiple sclerosis). According to independent research, the market for DMD drugs is expected to reach US\$4 billion in the next two years.

Bioshares recommendation: Speculative Hold Class B

Bioshares

The ASX-Listed Life Sciences Sec 1 July, 2021: Capitalisation \$222 billion, 148 companies

Bioshares Large Cap. Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1/7/21
CSL	CSL	129,026	Manufactures pharmaceutical products including vaccines and human plasma fractions	7.1%	-1.2%	\$283.50
Resmed Inc.	RMD	47,518	Manufactures diagnostic and treatment equipment for sleeping disordered breathing	29.9%	19.1%	\$32.79
Cochlear	СОН	16,136	Manufactures cochlear hearing implants	16.3%	29.9%	\$245.43
Polynovo	PNV	1,831	Developing and selling novel polymer-based products for treating wounds and burns	2.2%	9.1%	\$2.77
Nanosonics	NAN	1,743	Developing a novel disinfection technology. The first product, on the market, is a point of care ultrasound probe disinfection unit, branded Trophon EPR	1.6%	-15.1%	\$5.79
Imugene	IMU	1,668	Developing two B-Cell cancer vaccines, HER-Vaxx and PD1- Vaxx, and an oncolytic virus technology, CF33	191.7%	1029.0%	\$0.35
Telix Pharmaceuticals	TLX	1,663	Development of molecularly-targeted radiation (MTR) therapies and diagnostics	38.1%	361.7%	\$5.91
Clinuvel Pharmaceuticals	CUV	1,492	Markets an analogue of the alpha-MSH protein, named Scenesse, as a photo-protective agent	11.6%	17.7%	\$30.20
Blackmores	BKL	1,408	Manufactures vitamin, mineral and herbal supplements and skin & hair products in Australia and N.Z.	-8.7%	-6.6%	\$72.81
Mesoblast	MSB	1,294	Developing cellular medicines to treat advanced heart failure, chronic low back pain and acute graft versus host disease	-8.1%	-38.6%	\$2.00

Capitalisation Total

203,779

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1 <i> </i> 7/21
Avita Medical	AVH	668	Markets ReCell, a skin repair product. Redomiciled to the US. Now Nasdaq listed and trades as CDIs. (20:1 share consolidation)	6.1%	-40.2%	\$5.38
Sigma Pharmaceuticals	SIG	636	Pharmaceutical manufacturing and wholesaling	-11.8%	-4.0%	\$0.60
Starpharma Holdings	SPL	621	Developer of pharmaceutical chemical scaffolds known has 'dendrimers'	-20.3%	36.0%	\$1.53
API	API	544	Pharmaceutical wholesaler	-13.7%	-3.5%	\$1.11
Race Oncology	RAC	530	Completing the development of a chemotherapy drug, called Bisantrene, which was the subject of more than 40 phase II clinical studies during the 1980s and 1990s.	-0.3%	427.1%	\$3.69
Mayne Pharma Group	MYX	518	Manufactures, develops and markets generic drugs, with operations in Australia and the USA	-7%	-16%	\$0.33
AnteoTech	ADO	498	Developer of a biological coatings technology that can be applied to immunoassays, bio-separations, drug delivery and other medical devices	2.0%	1175.0%	\$0.26
PYC Therapeutics	PYC	476	Developing VP-001 to treat retinitus pigmentosa	-11.8%	30.4%	\$0.15

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1 <i>/</i> 7/21
Avita Medical	AVH	668	Markets ReCell, a skin repair product. Redomiciled to the US. Now Nasdaq listed and trades as CDIs. (20:1 share consolidation)	6.1%	-40.2%	\$5.38
Sigma Pharmaceuticals	SIG	636	Pharmaceutical manufacturing and wholesaling	-11.8%	-4.0%	\$0.60
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AnteoTech	ADO	498	Developer of a biological coatings technology that can be applied to immunoassays, bio-separations, drug delivery and other medical devices	2.0%	1175.0%	\$0.26
PYC Therapeutics	PYC	476	Developing VP-001 to treat retinitus pigmentosa	-11.8%	30.4%	\$0.15
Paradigm Biopharm.	PAR	472	Developing pentosan polysulphate sodium to treat bone marrow oedema, joint pain and mucopolysaccharidosis type I	-18.7%	-33.7%	\$2.09
Opthea	OPT	447	Developing OPT-302 to treat wet AMD (an eye disease)	-18.9%	-45.6%	\$1.29
AFT Pharmaceuticals	AFP	439	Development and sale of pharmaceuticals in Australasia and Rest-of-World	-4.5%	16.7%	\$4.20
Immutep	IMM	400	Developing immuno-oncology drug candidates IMP761 and IMP321 (eftilagimod alpha)	32.1%	245.2%	\$0.54
Alcidion	ALC	398	Specialist health IT solution provider	22.6%	162.1%	\$0.38
4D Medical	4DX	352	Commercialising a lung function imaging technology (XV) which uses existing x-ray imaging systems combined with image processing methods to image the lung in motion	-29.7%	65.8%	\$1.21
Aroa Biosurgery	ARX	331	Manufacture and sale of wound healing and soft tissue reconstruction products	-8.3%	46.7%	\$1.10
Medical Developments	MVP	329	Commercialising the Penthrox inhaler for temporary pain relief. Used widely in ambulances across Australia.	-11.5%	-34.0%	\$4.61
Trajan Group Holdings	TRJ	302	Develops and manufactures scientific instruments for life sciences sector (Listed Q2 2021)	37.1%	37.1%	\$2.33
Volpara Health Technologies	VHT	299	Markets breast density assessment tools and analytics, for use with breast x-ray screening programs	-8.5%	-13.1%	\$1.19
Clovercorp	CLV	299	Development and production of omega-3 food additives from tuna oil	-2.7%	-15.7%	\$1.80
Next Science	NXS	288	Commercialisation of anti-biofilm products	11.7%	18.8%	\$1.49

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1 <i>/7/</i> 21
Mach 7 Technologies	M7T	252	Development and sales of an enterprise imaging management platform	-18.6%	10.3%	\$1.07
Cogstate	CGS	238	Markets cognitive performance diagnostic products	50.3%	286.1%	\$1.39
Imricor	IMR	232	Design, manufacture and sales of MRI-compatible products for cardiac ablation procedures to treat arrhythmias	-6.9%	34.9%	\$2.01
Emvision Medical Devices	EMV	212	Exploiting low energy non-ionising microwave radiation to create 3D images, with the goal of developing a device to support the diagnosis of the two main types of stroke	16.2%	125.4%	\$3.02
Actinogen Medical	ACW	208	Developing Xanamem for the treatment of dementia in Alzheimer's disease patients	220.5%	468.2%	\$0.13
Vectus Biosystems	VBS	200	Developing an anti-fibrotic compound, VB0004, with applications in heart and kidney disease	7.4%	80.6%	\$1.30
Neuren Pharmaceuticals	NEU	193	Developing neuroprotective therapeutics	14.3%	20.1%	\$1.64
Somnomed	SOM	190	Markets oral devices for the treatment of sleep apnea and snoring	15.0%	91.7%	\$2.30
Noxopharm	NOX	184	Developing a cancer treatment, NOX66, a formulation of idronoxil, which targets NADH oxidase 2.	4.8%	300.0%	\$0.66
Rhythm Biosciences	RHY	181	Developing Colostat, a blood test for the early detection of colorectal cancer	-24.4%	1039.2%	\$0.90
Probiotec	PBP	170	Manufacturer, marketer and distributor of a range of over the counter (OTC) pharmaceuticals, complementary medicines and speciality ingredients	0.9%	12.4%	\$2.17
Kazia Therapeutics	KZA	167	Developing GDC-084 for the treatment of glioblastoma multiform (a brain cancer)	-17.2%	175.0%	\$1.32
Recce	RCE	166	Development of broad spectrum antibiotics	-1.0%	42.5%	\$0.96
Impedimed	IPD	164	Markets products that aid the diagnosis of secondary lymphoedema, muscle wasting and other disorders	-12.0%	77.4%	\$0.11
Bionomics	BNO	161	Discovery and development of drugs to treat CNS diseases	-15.6%	227.6%	\$0.19
Universal Biosensors	UBI	160	Development, manufacture and commercialisation of a range of in vitro diagnostic tests for point-of-care use	76.5%	350.0%	\$0.90
Genetic Signatures	GSS	159	Development and sale of molecular diagnostics (MDx) kits and products.	-28.8%	-49.1%	\$1.11
BARD1 Life Sciences	BD1	155	Developing cancer diagnostics and therapies. (30 for 1 share consolidation conducted)	-45.9%	7066.7%	\$1.94
Micro-X	MX1	154	Development of a mobile medical x-ray imager for hospitals, a version for deployed military use and a mobile security back -scatter imager	1.5%	148.1%	\$0.34
Prescient Therapeutics	PTX	147	Developing compounds to treat various cancers	109.1%	325.9%	\$0.23
Cyclopharm	СҮС	131	A nuclear medicine company that markets the Technegas lung imaging system	-35.8%	17.9%	\$1.65

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Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1 <i> </i> 7/21
Immuron	IMC	122	Sales and development of hyper-immune bovine colostrum products for therapeutic use	32.1%	245.2%	\$0.54
Antisense Therapeutics	ANP	121	Developing antisense compounds to treat multiple sclerosis and Duchense Muscular Dystrophy	0.0%	183.8%	\$0.21
Orthocell	000	116	Developing and marketing regenerative medicine products	23.0%	95.2%	\$0.62
Medadvisor	MDR	115	Medication adherence software platform company	-12.9%	-39.0%	\$0.31
Optiscan Imaging	OIL	112	Manufactures confocal microscopes for clinical diagnosis	2.3%	494.6%	\$0.22
Chimeric Therapeutics	СНМ	107	Developing CART T therapy for solid cancers licensed from the City of Hope Cancer Center (Listed Q1 2021)	14.0%	62.5%	\$0.33
Atomo Diagnostics	AT1	107	Manufactures rapid diagnostic test devices for OEM customers	-20.8%	-44.1%	\$0.19
SDI	SDI	105	Manufacture & distribution of amalgam (fillings) & other dental materials and product R&D	7.9%	25.5%	\$0.89
Imagion Biosystems	IBX	102	Developing MagSense, a diagnostic technology which exploits the principles of superparamagnetic relaxometry	-36.1%	253.6%	\$0.10
Patrys	PAB	99	Developing novel antibody therapies for a range of oncology indications. Focussed on 3E10, a cell penetrating antibody.	89.7%	358.3%	\$0.06
Proteomics International	PIQ	97	Provider of protein chemistry analytical services. Seeking to commercialise a diabetic kidney disease diagnostic.	-21.6%	120.2%	\$0.93
Botanix Pharmaceuticals	вот	90	Developing BTX1503 for the treatment of acne. BTX1503 combines synthetic cansabidiol with a transdermal drug delivery system, Permetrex.	-6.1%	135.9%	\$0.09
Exopharm	EX1	84	Development of technology for improving the purification of exosomes, which are extra-cellular vesicles which transport bioactive molecules through out the body.	-14.3%	140.0%	\$0.60
Resonance Health	RHT	83	Markets FerriScan, a non-invasive tool for measuring liver iron levels	-10.0%	20.0%	\$0.18
Genetic Technologies	GTG	81	Markets cancer risk tests	0.0%	80.0%	\$0.01
IDT Australia	IDT	78	Manufacturer of pharmaceutical ingredients to international standards for major pharmaceutical groups.	-27.0%	97.0%	\$0.33
Cynata Therapeutics	СҮР	75	Stell cell technology company aiming to produce unqimited uniform, pharmaceutical grade MSCs from a single donor.	-16.1%	-14.8%	\$0.52
Invion	IVX	72	Development of Photosoft, a photosensitiser derived from chlorophyll, which it is believed can accumulate selectively in tumours and be manipulated for therapeutic purposes.	44.4%	62.5%	\$0.01
CardieX	CDX	69	Development of wearable blood pressure measurement devices	15.4%	257.1%	\$0.08
Compumedics	CMP	69	Develops, manufactures and markets sleep diagnostic and monitoring equipment.	-15.2%	-6.0%	\$0.39
Painchek	РСК	68	Commercialising a smartphone app which uses facial recognition technology to detect indications of pain. TGA cleared and CE Marked.	-25.0%	-47.8%	\$0.06

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1 <i> </i> 7/21
Alterity Therapeutics	ATH	63	Developing PBT434 for synucleinopathies	-6.3%	76.5%	\$0.03
Vita Life Sciences	VLS	61	Development, manufacture and distribution of prescription and OTC medicines as well as complementary and alternative medicines, dietary supplements and health foods	15.4%	100.9%	\$1.13
Control Bionics	CBL	58	Design, manufacture and sale of wireless wearable electromyography (EMG) based augmentative and alternative communication (AAC) technology (Listed Dec 2020)	12.1%	15.8%	\$0.70
Osteopore	osx	55	Manufacture of 3D bioresorbable implants. Three products are FDA cleared and CE Marked for cranio-facial indications	0.0%	16.3%	\$0.47
Oncosil Medical	OSL	53	Developing Oncosil, a brachytherapy for pancreatic cancer and liver cancer	-31.5%	-45.2%	\$0.06
Memphasys	MEM	52	Developing a sperm separation technology, Sperm Sep	0.0%	17.2%	\$0.07
Respiri	RSH	51	Respiratory and pulmonary devices company. Markets Airsonea, an ehealth product	-49.3%	-20.2%	\$0.07
Nyrada	NYR	50	Developing drugs to treat cardiovascular, neurological and chronic inflammatory diseases	3.2%	82.9%	\$0.32
Anteris Technologies	AVR	49	Application of proprietary ADAPT technology to treate tissue used in the manufacture of cardiovascular prostheses	-42.6%	43.5%	\$7.03
IMEXHS	IME	49	Markets a radiology and imaging platform, in Latin and South America, and uses SaaS and PaaS revenue models. (Completed 50:1 consolidation)	-30.4%	10.3%	\$1.60
Heramed	HMD	48	Commercialising a home pregnancy monitoring technology	183.5%	216.1%	\$0.28
Nova Eye Medical	EYE	47	Developing devices devices to treat glaucoma	-3.0%	-52.2%	\$0.33
Neuroscientific Biopharm.	NSB	47	Developing EmtinB, an LRP-1 receptor agonist for the treatment of Alzheimer's disease	25.0%	71.1%	\$0.33
Invex Therapeutics	IXC	43	Developing a formulation of the diabetes drug exanatide to treat idiopathic intracranial pressure and other indications	-20.8%	-51.5%	\$0.63
Dimerix	DXB	40	Developing a combination therapy, DMX200, to treat chronic kidney disease.	-21.6%	-42.9%	\$0.20
Acrux	ACR	40	Developer of topical generic drugs	-12.5%	-3.4%	\$0.14
Rhinomed	RNO	39	Developing nasal stent technologies with applications for sport performance, sleep and drug delivery	24.0%	124.6%	\$0.16
Pharmaxis	PXS	39	Developer of Bronchitol, which is approved in Europe and the USA for the management of cystic fibrosis. Developing a suite of compounds from amine oxidase platform.	6.2%	30.3%	\$0.09
Biotron	BIT	37	Developing a drug to treat HIV. Testing drug library against SARS-CoV-2	-17.5%	-29.7%	\$0.05
Osprey Medical	OSP	36	Markets DYEVERT, a device which reduces the amount of dye needed in imaging procedures		27.3%	\$0.01
Adalta	1AD	36	Developing AD-214 for the treatment of idiopathic pulmonary fibrosis (IPF) and other human fibrotic diseases	-12.1%	70.6%	\$0.15

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Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1/7/21
ResApp Health	RAP	35	Developing digital healthcare solutions to diagnose and manage respiratory conditions	-39.7%	-76.6%	\$0.04
Star Combo Pharma	S66	35	Develops, manufactures and markets nutritional and OTC products	-8.9%	-36.3%	\$0.26
Suda Pharmaceuticals	SUD	34	Developing drugs for oro-mucosal administration. Recently acquired IP for anagrelide, with intent to develop it as an anti- cancer therapy	52.2%	89.2%	\$0.07
Avecho Biotechnology	AVE	33	Commercialising a drug delivery system	-18.2%	157.1%	\$0.02
Singular Health Group	SHG	33	Developing medical imaging software (Listed Q1 2021)	-44.3%	60.0%	\$0.32
Visioneering Technologies	VTI	32	Markets a next-generation contact lens (100:1 share consolidation)	-15.6%	3.8%	\$1.35
Amplia Therapeutics	ATX	30	Developing drug candidates to treat fibrotic cancers and fibrosis. Formerly Insate Immunotherapeutics.	-7.7%	92.0%	\$0.24
Total Brain	ттв	30	Development and commercialisation of functional brain analysis techniques.	14.8%	-17.3%	\$0.31
PharmAust	PAA	29	Developing a veterinary anti-parasitic compound (PPL-1) as a human and animal cancer therapy	-11.4%	-40.0%	\$0.09
Bluechiip	вст	29	Development, manufacture and commercialisation of a tracking system for biological samples	33.3%	-2.0%	\$0.05
TALI Digital	TD1	28	Software company developing tools for assessment and improvement of attention in children. Formerly Novita Healthcare.	-38.8%	20.0%	\$0.03
USCOM	UCM	26	Markets Uscom, a non-invasive heart output function monitor, BP+ non-invasive central blood pressure product and digital ultrasonic spirometry products	3.0%	-20.9%	\$0.17
Bio-Gene Technology	BGT	26	Commercialisation of the insecticides Flavocide (synthetic) and Qcide (plant-derived), in the fields of human health and crop protection.	25.9%	30.8%	\$0.17
Truscreen	TRU	25	Commercialising cervival cancer screening device for real time deection of cancerous and pre-cancerous tissue (Listed Q1 2021)	-18.8%	6.2%	\$0.07
Island Pharmaceuticals	ILA	25	A drug repurposing company that focuses on the development of antivirals for infectious diseases (Listed Q2 2021)	22.0%	22.0%	\$0.31
Nutritional Growth Solutions	NGS	24	Development and sale of nutritional supplements for children. (Listed Q4 2020)	4.1%	27.5%	\$0.26
LBT Insovations	LBT	23	Developer of insovative products which deliver productivity benefits across a range of life science settings	-20.0%	-65.2%	\$0.08
Regeneus	RGS	22	Commercialisation of autologous adipose derived stem cells and factors. Markets HiQCell for human use and CryoShot for veterinary use.	-38.3%	5.7%	\$0.07
HitlQ	HIQ	22	Develops and sells head impact mouthguards to assist in assessment of sport related concussion injuries (Listed Q2 2021)	-5.0%	-5.0%	\$0.19
Hexima	HXL	22	Developing HXP124 to treat fungal infection of toenails (Re- listed Q4 2020)	-15.0%	-15.0%	\$0.17

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1 <i> </i> 7 <i> </i> 21
Oventus	OVN	21	Developing an oral appliance to treat sleep apnea and snoring	-52.0%	-66.3%	\$0.10
Allegra Orthopeadics	AMT	21	A developer and manufacturer of prosthetic implants and medical devices.	-37.5%	124.7%	\$0.20
Lifespot Health	LSH	19	Commercialising the Bodytel diagnostic software, which is deployed with its Medihale medical cansabis vaporiser system, as well as with patients with metabolic syndrome	-4.3%	189.5%	\$0.11
Cryosite	CTE	18	Provides specialised storage services, especially for umbilical cord blood	69.6%	200.0%	\$0.39
Bioxyne	BXN	18	Sale and distribution of probiotics	75.0%	180.0%	\$0.03
StemCell United	SCU	18	Applies a proprietary stem cell technology to culture and grow plant extracts for use in Traditional Chinese Medicine.	-22.7%	30.8%	\$0.02
Argenica Therapeutics	AGN	15	Developing therapeutics to reduce brain damage following stroke (Listed Q2 2021)	2.5%	2.5%	\$0.21
Adherium	ADR	14	Commercialising personal digital medication monitoring systems to improve patient compliance and medication efficacy	6.2%	-29.2%	\$0.02
Holista Colltech	нст	14	Markets dietary supplements and disinfectant products	-9.2%	-56.3%	\$0.06
Cellmid	CDY	11	Develops and markets therapies and diagnostic tests for fibrotic diseases, cancer, ischemic diseases of the heart and hair loss.	-33.3%	-40.0%	\$0.06
Asian American Medical Group	AJJ	11	Manages liver treatment centres in Asia; expanding into radiation oncology	-40.0%	37.5%	\$0.03
Anatara Life Sciences	ANR	11	Developing a gastrointestinal dietary supplement	-8.8%	19.2%	\$0.16
Dorsavi	DVL	10	Commercialising a wireless sensor movement monitoring system and products for use in the Elite Sports, OH&S and medical/physiotherapy markets	-21.6%	123.1%	\$0.03
Medibio	MEB	9	Commercialising a test for depression and anxiety	-22.2%	16.7%	\$0.01
Analytica	ALT	9	Markets the Pericoach product to aid in the management of female urinary incontinence.	-33.3%	0.0%	\$0.00
Living Cell Technologies	LCT	7	Development of NTCELL for the treatment of Parkinson's Disease, and potentially for eye and ear diseases	8.3%	8.3%	\$0.01
Jayex Healthcare	JTL	6	Commercialisation of the Enqighten patient workflow platform	-42.2%	44.4%	\$0.03

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Chanse - Year	Price 1/7/21
Incansex	IHL	270	Developing medical cansabis products to treat OSA, TBI and ARDS and TMD	26.8%	465.2%	\$0.26
Little Green Pharna	LGP	174	Sale and distribution of medicinal cansabis products	32.9%	165.7%	\$0.93
Creso Pharma	СРН	149	Development of cansabis and hemp derived therapeutic, nutraceutical, and life style products with wide patient and consumer reach for human and animal health.	-32.5%	335.5%	\$0.14
Cans Group	CAN	106	Medicinal cansabis company focused on the breeding, cultivation and production stages. Holds Australian ODC cultivation (MC) and research license (CR). Acquired Satipharm in 2021.	-29.6%	-51.9%	\$0.38
Elixinol Global	EXL	102	A supplier of hemp and medicinal cansabis products. To Acquire CansaCare Health GmbH	-3.0%	-52.2%	\$0.33
Althea Group	AGH	88	Supply of branded medicinal cansabis products in Australia. To cultivate, extract and manufacture medicinal cansabis. Holds ODC manufacturing license.	-32.3%	4.7%	\$0.34
MGC Pharmaceuticals	MXC	86	A medical and cosmetic cansabis company with growing operations in Slovenia. Acquired Czech company Panax Pharma.	-38.7%	90.0%	\$0.04
Palla Pharma	PAL	62	Vertically integrated opiate manufacturer	-22.2%	-51.9%	\$0.39
Zelira Therapeutics	ZLD	55	Developer of medicinal cansabis therapeutic products	-23.3%	-14.8%	\$0.05
Medlab Clinical	MDC	51	Development, production and marketing of nutraceuticals cansabis product to treat cancer patients with intractable pain	-35.4%	3.3%	\$0.16
Auscans Group Holdings	AC8	48	Developing medical cansabis products for the Australian market. (Acquired CansPal Animal Therapeutics in 2021)	-21.4%	-18.5%	\$0.11
Bod Australia	BDA	38	Developer and distributor of natural, evidence-based cosmetics and natural medicines. Holds medicinal cansabis import license. Overseas partner is Linsea SA.	-24.5%	31.5%	\$0.36
Neurotech International	NTI	35	Has acquired proprietary cansabis strains for treating autism, epilepsy and ADHD	-28.9%	575.0%	\$0.05
Cans Global	CGB	26	Operates a hemp seeds business and conducts medical cannabis research	-37.5%	0.0%	\$0.01
Epsilon Healthcare (Formerly named THC Global Group)	EPN	25	A diversified global cansabis company with operations in Australia and Canada	-36.6%	-52.7%	\$0.13
Cronos	CAU	14	Medicinal cansabis health and wellness business	-8.3%	61.8%	\$0.11
Fiji Kava	FIJ	14	Cultivation and development of kava (piper methysticum) as an alternative treatment for anxiety, pain and insomnia.	-19.2%	43.8%	\$0.11

Botanical Product Companies (Cultivated Production)

Capitalisation Total

1,342

Listed Biotech Investment Funds or Companies

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 1 <i>/7/</i> 21
BTC Health	BTC	18	Provides capital and management expertise to high-growth Australian biotech, medtech and pharmaceutical companies	-5%	-24%	\$0.07
Capitalisation Total		18				
Capitalisation Total - All Indices		221,563				

Bioshares Num	ber 897 – 13 July 2021	Page 15
How Bioshares Rates Stocl For the purpose of valuation, Bios two categories. The first group are flows or close to producing positiv stocks without near term positive early stages of commercialisation.	(S hares divides biotech stocks into stocks with existing positive cash e cash flows. The second group are cash flows, history of losses, or at in this second group, which are s, Bioshares grades them according to better reflect the very large For both groups, the rating "Take e may re-weight their holding by k. ws or close to producing positive cash to Value	 Group B Stocks without near term positive cash flows, history of losses, or at early stages of 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
LightenCMP is 10% > FaiSollCMP is 20% > Fai		many external validation features. Speculative Hold – Class A or B or C
Sell CMP is 20% > Fair (CMP-Current Market Price)	value	Sell
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