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Companies covered: **Quarterly Review**

	Bioshares Portfolio
Year 1 (May '01 - May '02)	21.2%
Year 2 (May '02 - May '03)	-9.4%
Year 3 (May '03 - May '04)	70.6%
Year 4 (May '04 - May '05)	-16.3%
Year 5 (May '05 - May '06)	77.8%
Year 6 (May '06 - May '07)	17.4%
Year 7 (May '07 - May '08)	-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 - Current)	14.8%
Cumulative Gain	1150%
Av. Annual gain (19 yrs)	17.3%

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Bioshares

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

Quarterly Review

Strong Demand for Biotech in June Quarter

Against the backdrop of the SARS-CoV-2 coronavirus pandemic, closed national borders and weakening economies, the **Bioshares Index** made a striking comeback in the June quarter, recording a 37.7% gain after a 27% decline in the previous quarter. This performance exceeded that of the **Nasdaq Biotech Index**, which rose 26.7% for the quarter, the **ASX 300 Index**, up 14.6%, and the **Bioshares Botanicals Index**, which posted a 12.9% increase.

The Bioshares Index includes 122 companies, with an aggregate capitalisation of \$16.8 billion. The index leader for the June quarter was Mesoblast, which was capitalised at \$1.89 billion, after registering a 135% gain over the quarter.

The Bioshares Botanicals Index includes 18 companies with an aggregate capitalisation of \$758 million. The largest company by capitalisation in this index is Elixinol Global (\$131 million), up 31% for the quarter.

The **Bioshares Large Cap Index** held steady, posting a 0.2% gain, although it was 33.5% higher on a yearly basis. The five companies in the Bioshares Large Index include CSL (\$130.3 billion; -3.3%), Resmed (\$39.8 billion; +11.5%), Cochlear (\$12.4 billion; +0.8%), Nanosonics (\$2 billion; +22%), and Blackmores (\$1.5 billion; +6.9%).

Highlights

Several events of note during the quarter included CSL's acquisition of a gene therapy asset and the closing of Ellex Medical Laser's sale of its lasers and ultrasound business.

CSL agreed to acquire the global rights to a Phase III, hemophilia B, AAV gene therapy program (AMT-601) from leading gene therapy company uniQure N.V. (Netherlands) (Nasdaq: QURE; Cap'n: US\$1.985 billion).

CSL will pay uniQure US\$450 million up-front with additional milestone and royalty payments to follow. uniQure will manufacture AMT-601 for CSL. This is a rare product rights acquisition for CSL, but fits into the company's gene therapy program. CSL acquired US company Calimmune in 2017 for an upfront payment of US\$91 million, and has a sickle cell gene therapy trial underway of CSL-200, an autologous enriched CD34+ cell fraction that contains CD34+ cells transduced with lentiviral vector encoding human gamma-globin G16D and short-hairpin RNA73.

Continued over

Index Performance by Quarter (Change from previous Qtr)

	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2021
Bioshares Index	20.9%	18.2%	-1.0%	-27.0%	36.7%
Bioshares Large Cap Index	12.0%	9.3%	15.4%	6.3%	0.2%
Bioshares Botanicals Index	2.6%	-14.4%	-42.9%	-34.6%	12.9%
Nasdaq Biotech Index	-2.4%	-8.8%	21.1%	-10.4%	26.7%
ASX 300 Index	7.2%	1.2%	0.0%	-23.1%	14.6%

Bioshares Index – Top 10 Outperformers – June Quarter

Company	Code	Cap. \$m	Change - Quarter	Change - Year	Price 30/06/20
Avecho Biotechnology	AVE	11	250.0%	133.3%	\$0.007
Sienna Cancer Diag.	SDX	17	195.5%	6.6%	\$0.065
Race Oncology	RAC	82	180.0%	1220.8%	\$0.700
Recce	RCE	91	157.7%	211.6%	\$0.670
Emvision	EMV	85	152.8%	267.1%	\$1.340
Dimerix	DXB	69	150.0%	311.8%	\$0.350
Mesoblast	MSB	1,898	134.7%	120.3%	\$3.250
Imagion Biosystems	IBX	21	133.3%	75.0%	\$0.028
PharmAust	PAA	47	127.9%	307.9%	\$0.155
Amplia Therapeutics	ATX	7	115.5%	28.9%	\$0.125

Ellex Medical Laser's completed the sale of its lasers and ultrasound business to Lumibird Group AS for a final sum of \$97.2 million.

The original sale value was adjusted for certain expenditures incurred since the sale was agreed in December 2019. The major part of the proceeds will be returned to shareholders by way of a dividend and capital return (\$61 million).

Ellex Medical Lasers has now changed its name to Nova Eye Medical (ASX: EYE) and will retain its 2RT laser technology which is used to treat patients with intermediate age-related macular degeneration. Its focus will now be on glaucoma disease through its iTrack business. The company recently announced the acquisition of products developed by glaucoma therapy pioneer Professor Anthony Moltano (Dunedin, New Zealand).

Capital Raisings

Contrary to our expectations in the March Quarter Review, significant capital flowed into the sector in the June quarter, with \$605 million raised*.

The sum stands in stark contrast to the \$74 million raised in the March quarter, but was on par with the \$577 million raised in the December quarter, 2019. (Note that Blackmore's \$92 million placement in the June quarter and Cochlear's \$880 million placement in the March quarter and its \$220 million SPP in the June quarter are not included in these figures.)

Companies took advantage of positive sentiment towards healthcare and medical product companies to initiate funding rounds to strengthen balance sheets and address working capital requirements in the face of economic uncertainty and volatility.

One IPO was completed during the quarter, that of Atomo Diagnostics, which raised \$30 million and closed the quarter up 70% from its 20 cps offer price.

Outperformers

The top performing stock in the Bioshares Index in the June quarter was Avecho Biotechnology, which rose 250%, although from a low base of \$0.004 to \$0.007. The company, formerly known as Phosphagenics, is continuing the commercialisation of its alpha-tocopherol drug delivery and enhancement technology, with li-

Bioshares Index – Bottom 10 Underperformers – June Quarter

Company	Code	Cap. \$m	Change - Quarter	Change - Year	Price 30/06/20
Cellmid	CDY	12	-68.8%	-42.9%	\$0.100
Allegra Orthopaedics	AMT	9	-40.7%	-1.1%	\$0.089
Heramed	HMD	11	-40.0%	-54.2%	\$0.087
Lifespot Health	LSH	4	-29.6%	-52.5%	\$0.038
Pharmaxis	PXS	26	-28.3%	-74.1%	\$0.066
Osprey Medical	OSP	16	-26.7%	-85.7%	\$0.011
Bluechiip	BCT	29	-24.6%	-37.2%	\$0.049
Suda Pharmaceuticals	SUD	5	-24.5%	-50.7%	\$0.037
Asian Amer. Medical Grp	AJJ	8	-20.0%	-80.0%	\$0.024
Anatara Life Sciences	ANR	6	-18.8%	-49.0%	\$0.130

censing deals for Daptomycin TPM, Propfol TPM and Vitamin K TPM targeted over the next 12 months.

Shares in Sienna Diagnostic increased by 196% over the quarter. Sienna is currently in the process of merging with BARD 1 Life Sciences through a Scheme of Arrangement. The combined entity would possess a portfolio of products which can be used or are being developed for use in pancreatic, ovarian, breast and bladder cancers. The pro forma cash balance of the combined entity at March 31, 2020 was \$9.2 million.

Race Oncology locked in a 180% increase as investors responded to data from its 10 patient Phase II trial of bisantrene in relapsed/refractory acute myeloid leukemia (AML). However, the AML drug development field is congested. There are active 227 studies of candidates targeting relapsed/refractory acute myeloid leukemia, including at least 12 CAR-T therapies.

Some context can be gained from the CD19 targeted CAR-T therapy Kymriah which has demonstrated success in treating CD-19+ acute lymphoblastic leukemia (ALL), achieving complete remissions at three months in 81% of patients in a Phase II trial in 75 pediatric and young adult patients. Some current AML CART trials are based on the exploitation of CD33 and CD123 antigens. Others are being investigated.

As an aside, it is worth noting that small molecule drug developer Prescient Therapeutics recently licensed a CAR-T platform, OmniCAR from the University of Pennsylvania, and a complementary technology from Oxford University. What makes this stand out is that it is a universal platform, as opposed to the existing CAR-T therapies which must be developed on a patient-by-patient basis.

Anti-infectives company Recce recorded a 158% gain, taking its capitalisation to \$91 million by the end of the June quarter. Its founder Dr Graham Melrose announced his resignation on July 3. At the time of resignation he held a 23% stake in the company.

Emvision received strong support during the quarter, with its shares increasing by 153%. The company was able to recommence enrolment in its trial of a portable, microwave-based imaging system for use with stroke patients.

Bioshares

* updated this 2nd ed for correction of omission of IXC data.

Capital Raisings by Australian-listed Biotech Companies Q2 2020*

Company	Code	Investment Manager or Investor	Type of Raising	Funds Raised (A\$M)
Mesoblast	MSB	Bell Potter	Placement	\$138.0
AFT Pharmaceuticals	AFP	Bell Potter / Forsyth Barr	Placement	\$69.0
Paradigm Biopharm.	PAR	Bell Potter	Placement	\$35.0
Volpara Health Tech.	VHT	Bell Potter / Morgans Corporate	Placement	\$28.0
Volpara Health Tech.	VHT		SPP	\$9.0
Star Combo Pharma	S66	Goldenmax	Placement	\$33.3
Invex Therapeutics		Bell Potter	Placement	\$26.2
Neuren Pharm.	NEU	MST Financial	Placement	\$20.0
Impedimed	IPD	Wilsons Corporate / Canaccord Genuity	Rights Issue (Inst.)	\$10.0
Impedimed	IPD	Wilsons Corporate / Canaccord Genuity	Rights Issue (Retail)	\$8.2
Elixinol Global	EXL	Bell Potter	Rights Issue (Inst.)	\$11.0
Elixinol Global	EXL	Bell Potter	Rights Issue (Retail)	\$5.3
Somnomed	SOM		Rights Issue (Inst.)	\$9.7
Somnomed	SOM		Rights Issue (Retail)	\$5.8
Micro-X	MX1	Morgans Corporate / Bell Potter	Placement	\$8.8
Micro-X	MX1	Morgans Corporate / Bell Potter	Rights Issue	\$6.3
Genetic Technologies	GTG	H.C. Wainwright	Placement	\$12.1
Genetic Technologies	GTG	H.C. Wainwright	Placement	\$2.3
Oncosil	OSL	Bell Potter	Rights Issue	\$14.0
Osprey Medical	OSP	Brandon Capital Partners	Rights Issue	\$12.8
Immutep	IMM	Bell Potter	Placement	\$12.0
Kazia Therapeutics	KZA	Bell Potter	Placement	\$7.2
Kazia Therapeutics	KZA		SPP	\$1.8
Cynata	CYP		SPP	\$4.8
Cynata	CYP	H.C. Wainwright	Placement	\$3.5
Noxopharm	NOX	Canaccord Genuity	Rights Issue	\$7.9
Oventus	OVN	Canaccord Genuity / Bell Potter	Placement	\$4.7
Oventus	OVN		SPP	\$2.0
Cellmid	CDY	Evolution Equities	Placement	\$6.0
Cellmid	CDY		SPP	\$0.3
THC Global	THC	MST Financial	Placement	\$6.6
Visioneering	VTI	Shaw & Partners / Aurenda Partners	Placement	\$5.0
Visioneering	VTI		SPP	\$1.1
G Medical	GMV		Placement	\$6.0
Dimerix	DXB	Taylor Collison / Argonaut	Placement	\$5.8
Medlab Clinical	MDC	Morgans Corporate / Acova Capital	Placement	\$5.4
Respiri	RSH		Placement	\$2.0
Respiri	RSH		SPP	\$3.1
Adherium	ADR	Bioscience Managers	Placement	\$5.0
Rhinomed	RNO		Rights Issue (Part A)	\$3.9
MGC Pharmaceuticals	MXC	Canaccord Genuity	Placement	\$3.5
Bionomics	BNO	Apeiron Investment Group	Placement (T1)	\$3.3
Bio-Gene Tech.	BGT		Placement	\$2.4
Bio-Gene Tech.	BGT		SPP	\$0.428
Heramed	HMD		Placement	\$2.2
Imagion Biosystems	IBX	Mahe Capital	Rights Issue	\$2.1
Imagion Biosystems	IBX	Mahe Capital	Follow-on Placement	\$0.46
Esense Health	ESE	EverBlu	Placement	\$1.1
Medibio	MEB	CPS Capital Group	Placement	\$0.5
Lifespot Health	LSH		Placement	\$0.3
G Medical	GMV	Acuity Capital	Controlled Placement	\$0.25
Atomo Diagnostics	AT1	Canaccord Genuity	IPO (20 cps)	\$30.0
Total raised in Q2 2020				\$605.2
Total raised in Q1 2020				\$74.3
Total raised YTD 2020				\$679.5

Bioshares Model Portfolio (6 July 2020)

Company	Code	Price (current)	Price added to portfolio	Recommendation	Cap'n (\$M)	Date added
Opthea	OPT	\$2.480	\$0.160	Spec Buy A	\$668	November 2014
Telix Pharmaceuticals	TLX	\$1.530	\$0.910	Spec Hold A	\$388	May 2019
Volpara Health Technologies	VHT	\$1.490	\$0.375	Spec Hold A	\$371	June 2017
Cyclopharm	CYC	\$1.495	\$1.35	Spec Buy A	\$117	September 2019
Somnomed	SOM	\$1.395	\$0.94	Spec Hold B	\$115	January 2011
Immutep	IMM	\$0.165	\$0.320	Spec Buy A	\$80	March 2019
Dimerix	DXB	\$0.375	\$0.09	Spec Buy A	\$74	December 2018
Cogstate	CGS	\$0.425	\$0.24	Spec Buy A	\$70	April 2019
Micro-X	MX1	\$0.135	\$0.38	Spec Buy A	\$48	May 2017
Pharmaxis	PXS	\$0.075	\$0.260	Spec Buy B	\$30	December 2016
Acrux	ACR	\$0.150	\$0.31	Spec Buy A	\$25	July 2017
Adalta	1AD	\$0.120	\$0.07	Spec Buy B	\$20	May 2020
Rhinomed	RNO	\$0.075	\$0.24	Spec Hold B	\$19	Jun-19

Portfolio Changes – 6 July, 2020

IN:
No changes

OUT:
No changes

Stocks Removed from Bioshares Portfolio in TTM

Date removed	Stock
September 2019	1AD, ALC, BCT
June 2019	CUV

Selected Clinical Trial Developments - Q2 2020*

Company	Code	Product/Therapeutic	Event
Anteris Technologies	AVR	ADAPT single piece aortic valve	Completed second implant. To enroll 15 pts, w ho will be follow ed for 6 months
Dimerix	DXB	DMX200 (FSGS)	Completed dosing in Phase II trial (10 pts)
Immutep	IMM	IMP-321 in combination w ith avelumab (solid cancers)	Reported interim data fom Phase I trial, 12 pts. 33% of pts show ed a partial response
Immutep	IMM	IMP-321 (non small cell lung cancers)	Completed recruitment in cohort w ith first line NSCLC (19 pts - stage 2)
Invex Therapeutics	IXC	exenatide (idiopathic intra-cranial hypertension)	Completed Phase II study in 16 pts. Show ed a statistically significant reduction in IIH and 7.7 days (37%) reduction in monthly headache days
Kazia Therapeutics	KZA	Cantrixil (ovarian cancer)	Completed follow -up in Phase I trial, 20 pts. Reported median PFS in Part A of trial of 5.5 months (for 9 pts)
MGC Pharmaceuticals	MXC	Artemic (natural immune modulating formulation) (COVID-19)	Commenced recruitment for 50 pt Phase II study.
Neuren Pharmaceuticals	NEU	NNZ-2591 (analogue of cGP) (Phelan-McDermid, Angelman and Pitt Hopkins syndromes)	Commenced Phase I safety study in healthy adult volunteers, 30 subjects
Opthea	OPT	OPT-302 (VEGFC,D inhibitor) (soluble receptor 'trap; molecule) Diabetic macular edema	Reported results for 115 pt Phase IIa trial: 52.8% of patients treated w ith OPT-302, in combination w ith Eylea, achieved more than a five letter gain in vision; 60% of patients treated w ith Eylea alone achieved a five letter improvement in vision over the three months of treatment.
Race Oncology	RAC	Bisantrene (relapsed and /or refractory acute myeloid leukemia)	Reported results for 10 pt trial; 7 day single IV course; 1 CR and 3 partial responses)
Starpharma	SPL	DEP irinotecan (dendrimer encapsulated SN-38) (colorectal and other cancers)	Commenced Phase II study; stage 1 20-30 pts

* updated this 2nd ed for correction of omission of IXC data.

The ASX-Listed Life Sciences Sector

June 30 2020: Capitalisation \$203.7 billion, 146 companies

Bioshares Large Cap. Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
CSL	CSL	130,312	Manufactures pharmaceutical products including vaccines and human plasma fractions	-3.3%	33.5%	\$287.00
Resmed Inc.	RMD	39,833	Manufactures diagnostic and treatment equipment for sleeping disordered breathing	11.5%	60.4%	\$27.54
Cochlear	COH	12,410	Manufactures cochlear hearing implants	0.8%	-8.7%	\$188.93
Nanosonics	NAN	2,050	Developing a novel disinfection technology, the first product is a point of care ultrasound probe disinfection unit, branded Trophon EPR	21.8%	21.4%	\$6.82
Blackmores	BKL	1,456	Manufactures vitamin, mineral and herbal supplements and skin & hair products in Australia and N.Z.	6.9%	-13.3%	\$77.95

Capitalisation Total 186,062

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
Mesoblast	MSB	1,898	Developing cellular medicines to treat advanced heart failure, chronic low back pain and acute graft versus host disease.	134.7%	120.3%	\$3.250
Polynovo	PNV	1,679	Developing novel polymer-based products for treating wounds and burns	58.3%	64.9%	\$2.540
Clinuvel Pharmaceuticals	CUV	1,267	Markets an analogue of the alpha-MSH protein, named Scenesse, as a photo-protective agent. Approved in Europe.	34.2%	-23.8%	\$25.650
Avita Medical	AVH	966	Markets ReCell, a skin repair product. Redomiciled to the US. Now nasdaq listed and trades as CDIs (100:1 consolidation)	76.5%	114.3%	\$9.000
Paradigm Biopharm.	PAR	708	Development of existing approved drug, pentosan polysulphate sodium to treat bone marrow oedema and joint pain	97.5%	125.0%	\$3.150
Sigma Pharmaceuticals	SIG	662	Pharmaceutical manufacturing and wholesaling	-2.3%	12.6%	\$0.625
Opthea	OPT	635	Developing OPT-302 to treat wet AMD (an eye disease)	20.4%	252.2%	\$2.360
Mayne Pharma Group	MYX	613	Manufactures, develops and markets generic drugs, with operations in Australia and the USA	24%	-25%	\$0.385
API	API	564	Pharmaceutical wholesaler	-8.4%	-13.3%	\$1.145
Medical Developments	MVP	458	Commercialising the Pentrox inhaler for temporary pain relief. Used widely in ambulances across Australia.	31.2%	31.7%	\$6.980
Starpharma Holdings	SPL	419	Developer of pharmaceutical chemical scaffolds known as 'dendrimers'	46.1%	-17.3%	\$1.125

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
AFT Pharmaceuticals	AFP	371	Development and sale of pharmaceuticals in Australasia and Rest-of-World	-9.8%	23.7%	\$3.600
Clovercorp	CLV	354	Development and production of omega-3 food additives from tuna oil	9.8%	10.4%	\$2.130
Volpara Health Technologies	VHT	342	Markets breast density assessment tools and analytics, for use with breast X-rays screening programs	28.0%	-18.7%	\$1.370
PYC Therapeutics	PYC	337	Developing peptide compound libraries for use in human therapeutics. Formerly Phylogica.	91.7%	296.6%	\$0.115
Telix Pharmaceuticals	TLX	325	Development of molecularly-targeted radiation (MTR) therapies and diagnostics	28.6%	3.2%	\$1.280
Genetic Signatures	GSS	311	Development and sale of molecular diagnostics (MDx) kits and products.	24.6%	61.5%	\$2.180
Next Science	NXS	226	Commercialisation of anti-biofilm products	-2.7%	-69.6%	\$1.250
Mach 7 Technologies	M7T	211	Development and sales of an enterprise imaging management platform	86.5%	104.2%	\$0.970
Atomo Diagnostics	AT1	191	Manufactures rapid diagnostic test devices for OEM customers	70.0%	0.0%	\$0.340
Imricor	IMR	180	Design, manufacture and sales of MRI-compatible products for cardiac ablation procedures to treat arrhythmias	75.3%		\$1.490
Neuren Pharmaceuticals	NEU	157	Developing neuroprotective therapeutics	37.9%	19.2%	\$1.365
Probiotec	PBP	144	Manufacturer, marketer and distributor of a range of over the counter (OTC) pharmaceuticals, complementary medicines and speciality ingredients	-4.5%	22.9%	\$1.930
Alcidion	ALC	144	Specialist health IT solution provider	11.5%	16.0%	\$0.145
Imugene	IMU	137	Developing a Her2 positive cancer vaccine technology. Acquiring an oncolytic virus technology, CF33, from the City of Hope Hospital	55.0%	93.8%	\$0.031
Medadvisor	MDR	123	Medication adherence software platform company	12.4%	40.1%	\$0.500
ResApp Health	RAP	122	Developing digital healthcare solutions to diagnose and manage respiratory conditions	-10.3%	-10.3%	\$0.175
Painchek	PCK	119	Commercialising a smartphone app which uses facial recognition technology to detect indications of pain. TGA cleared and CE Marked.	40.2%	-45.2%	\$0.115
Cyclopharm	CYC	111	A nuclear medicine company that markets the Technegas lung imaging system	40.0%	-4.8%	\$1.400
Somnomed	SOM	99	Markets oral devices for the treatment of sleep apnea and snoring.	7.1%	-17.2%	\$1.200
Invex Therapeutics	IXC	99	Developing a novel formulation of the diabetes drug exanatide to treat intracranial pressure and other indications	78.1%	0.0%	\$1.300

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
Ellex Medical Lasers	ELX	98	Recently divested ophthalmic lasers business to Lumibird Broup, retaining focus on devices to treat glaucoma. Name change to Nova Eye Medical (ASX:EYE)	30.8%	28.3%	\$0.680
Oncosil Medical	OSL	96	Developing Oncosil, a brachytherapy for pancreatic cancer and liver cancer	-14.8%	117.0%	\$0.115
Recce	RCE	91	Development of broad spectrum antibiotics	157.7%	211.6%	\$0.670
Emvision	EMV	85	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	152.8%	267.1%	\$1.340
SDI	SDI	84	Manufacture & distribution of amalgam (fillings) & other dental materials and product R&D	-11.9%	-20.3%	\$0.705
Race Oncology	RAC	82	Completing the development of a chemotherapy drug, called Bisantrone, which was the subject of more than 40 phase II clinical studies during the 1980s and 1990s.	180.0%	1220.8%	\$0.700
Immutep	IMM	76	Developing immuno-oncology drug candidates IMP761 and IMP321 (eftilagimod alpha)	19.2%	-38.0%	\$0.155
Compumedics	CMP	74	Develops, manufactures and markets sleep diagnostic and monitoring equipment.	25.8%	-32.0%	\$0.415
Dimerix	DXB	69	Developing a combination therapy, DMX200, to treat chronic kidney disease.	150.0%	311.8%	\$0.350
Resonance Health	RHT	67	Markets FerriScan, a non-invasive tool for measuring liver iron levels	36.4%	42.9%	\$0.150
Cynata Therapeutics	CYP	63	Stem cell technology company aiming to produce unlimited uniform, pharmaceutical grade MSCs from a single donor.	-11.6%	-51.0%	\$0.610
Impedimed	IPD	62	Markets products that aid the diagnosis of secondary lymphoedema, muscle wasting and other disorders	55.0%	-46.1%	\$0.062
Cogstate	CGS	61	Markets cognitive performance diagnostic products	9.1%	84.6%	\$0.360
TBG Diagnostics	TDL	59	Development of HLA SSA and SBT diagnostic kits and related services	0.0%	671.4%	\$0.270
Orthocell	OCC	58	Developing and marketing regenerative medicine products	26.0%	-38.2%	\$0.315
Respiri	RSH	58	Respiratory and pulmonary devices company. Markets Airsona, an ehealth product.	20.3%	1.1%	\$0.089
Star Combo Pharma	S66	54	Develops, manufactures and markets nutritional and OTC products	-11.1%	-42.4%	\$0.400
LBT Innovations	LBT	54	Developer of innovative products which deliver productivity benefits across a range of life science settings	115.0%	100.0%	\$0.230
Biotron	BIT	52	Developing a drug to treat HIV. Testing drug library against SARS-CoV-2	-15.9%	12.1%	\$0.074
Micro-X	MX1	48	Development of a mobile medical x-ray imager for hospitals, a version for deployed military use and a mobile security back-scatter imager	0.0%	-38.6%	\$0.135

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
PharmAust	PAA	47	Developing a veterinary anti-parasitic compound (PPL-1) as a human and animal cancer therapy. Also operates Epichem, a medicinal chemistry service business.	127.9%	307.9%	\$0.155
Kazia Therapeutics	KZA	45	Developing GDC-084 for the treatment of glioblastoma multiform (a brain cancer)	20.0%	37.1%	\$0.480
Oventus	OVN	45	Developing an oral appliance to treat sleep apnea and snoring	16.3%	23.9%	\$0.285
Invion	IVX	44	Development of Photosoft, a photosensitiser derived from chlorophyll, which it is believed can accumulate selectively in tumours and be manipulated for therapeutic purposes.	14.3%	-46.7%	\$0.008
Memphasys	MEM	42	Developing a sperm separation technology, SpermSep	48.7%	132.0%	\$0.058
Osteopore	OSX	40	Manufacture of 3D bioresorbable implants. Three products are FDA cleared and CE Marked for cranio-facial indications	5.3%	0.0%	\$0.400
IDT Australia	IDT	40	Manufacturer of pharmaceutical ingredients to international standards for major pharmaceutical groups.	43.5%	0.0%	\$0.165
Proteomics International	PIQ	39	Provider of protein chemistry analytical services. Seeking to commercialise a diabetic kidney disease diagnostic.	68.0%	20.0%	\$0.420
Botanix Pharmaceuticals	BOT	38	Developing BTX1503 for the treatment of acne. BTX1503 combines synthetic cannabidiol with a transdermal drug delivery system, Permetrex.	69.6%	-78.3%	\$0.039
Genetic Technologies	GTG	38	Markets cancer risk tests	0.0%	-16.7%	\$0.005
BARD1 Life Sciences	BD1	37	Developing cancer diagnostics and therapies. Lead program is the BARD1 lung cancer test. Merging with Sienna Diagnostics.	28.6%	-6.9%	\$0.027
Bionomics	BNO	36	Discovery and development of drugs to treat CNS diseases	70.6%	81.3%	\$0.058
Total Brain	TTB	36	Development and commercialisation of functional brain analysis techniques. Completed 10:1 share consolidation	7.1%	44.2%	\$0.375
Universal Biosensors	UBI	35	Development, manufacture and commercialisation of a range of in vitro diagnostic tests for point-of-care use	29.0%	-7.8%	\$0.200
Noxopharm	NOX	35	Developing a cancer treatment, NOX66, a formulation of idronoxil, which targets NADH oxidase 2.	17.9%	-65.3%	\$0.165
Invitrocue	IVQ	35	Singapore-based analytical services company (life sciences)	0.0%	-9.1%	\$0.060
IMEXHS	IME	35	Markets a radiology and imaging platform, in Latin and South America, and uses SaaS and PaaS revenue models.	38.1%		\$0.029
Antisense Therapeutics	ANP	34	Developing antisense compounds to treat multiple sclerosis and Duchenne Muscular Dystrophy	54.2%	64.4%	\$0.074
AnteoTech	ADO	33	Developer of a biological coatings technology that can be applied to immunoassays, bio-separations, drug delivery and other medical devices	25.0%	53.8%	\$0.020
USCOM	UCM	32	Markets Uscom, a non-invasive heart output function monitor, BP+ non-invasive central blood pressure product and digital ultrasonic spirometry products	-14.0%	53.6%	\$0.215

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
Holista Colltech	HCT	32	Extracts collagen from sheepskins and markets natural healthcare products.	22.7%	221.4%	\$0.135
Vita Life Sciences	VLS	30	Development, manufacture and distribution of prescription and OTC medicines as well as complementary and alternative medicines, dietary supplements and health foods	-11.1%	-22.8%	\$0.560
Bluechiip	BCT	29	Development, manufacture and commercialisation of a tracking system for biological samples	-24.6%	-37.2%	\$0.049
Anteris Technologies	AVR	29	Application of proprietary ADAPT technology to treat tissue used in the manufacture of cardiovascular prostheses. Completed 100:1 share consolidation	9.6%	-18.3%	\$4.900
G Medical	GMV	29	Developing next generation mobile health and e-health devices, and cloud and medical call centres.	-4.4%	-79.5%	\$0.043
Immuron	IMC	28	Sales and development of hyper-immune bovine colostrum products for therapeutic use	19.2%	-38.0%	\$0.155
Pharmaxis	PXS	26	Markets the lung function test, Aridol. Bronchitol is approved in Europe for the management of cystic fibrosis. Developing a suite of compounds from amine oxidase platform.	-28.3%	-74.1%	\$0.066
Actinogen Medical	ACW	25	Developing Xanamem for the treatment of dementia in Alzheimer's disease patients	10.0%	120.0%	\$0.022
Acrux	ACR	24	Developer of topical generic drugs	31.8%	-21.6%	\$0.145
Imagion Biosystems	IBX	21	Developing MagSense, a diagnostic technology which exploits the principles of superparamagnetic relaxometry	133.3%	75.0%	\$0.028
Prescient Therapeutics	PTX	21	Developing compounds to treat various cancers	92.9%	42.1%	\$0.054
Exopharm	EX1	20	Development of technology for improving the purification of exosomes, which are extra-cellular vesicles which transport bioactive molecules through out the body.	47.1%	-39.0%	\$0.250
Bio-Gene Technology	BGT	20	Commercialisation of the insecticides Flavocide (synthetic) and Qcide (plant-derived), in the fields of human health and crop protection.	-7.1%	44.4%	\$0.130
Regeneus	RGS	19	Commercialisation of autologous adipose derived stem cells and factors. Markets HiQCell for human use and CryoShot for veterinary use.	0.0%	-17.6%	\$0.070
Nyrada	NYR	19	Developing drugs to treat cardiovascular, neurological and chronic inflammatory diseases	34.6%	0.0%	\$0.175
TALI Digital	TD1	19	Software company developing tools for assessment and improvement of attention in children. Formerly Novita Healthcare.	25.0%	108.3%	\$0.025
Optiscan Imaging	OIL	18	Manufactures confocal microscopes for clinical diagnosis	85.0%	-36.2%	\$0.037
Rhinomed	RNO	18	Developing nasal stent technologies with applications for sport performance, sleep and drug delivery	-5.5%	-69.3%	\$0.069
Sienna Cancer Diagnostics	SDX	17	Development of pancreatic cancer diagnostic (with Minomic Int.) and an exosome based therapeutic to treat CLI (with VivaZome). Merging with BARD1 Lifesciences.	195.5%	6.6%	\$0.065
Vectus Biosystems	VBS	17	Developing an anti-fibrotic compound, VB0004, with applications in heart and kidney disease	38.5%	111.8%	\$0.720

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
Osprey Medical	OSP	16	Markets DYEVERT, a device which reduces the amount of dye needed in imaging procedures	-26.7%	-85.7%	\$0.011
CardieX	CDX	16	Development of wearable blood pressure measurement devices	31.3%	-19.2%	\$0.021
Alterity Therapeutics	ATH	15	Developing PBT434 for synucleinopathies	6.3%	-41.4%	\$0.017
Adherium	ADR	14	Commercialising personal digital medication monitoring systems to improve patient compliance and medication efficacy	84.6%	-17.2%	\$0.024
Adalta	1AD	14	Developing AD-214 for the treatment of idiopathic pulmonary fibrosis (IPF) and other human fibrotic diseases	54.5%	-46.9%	\$0.085
Patrys	PAB	13	Developing novel antibody therapies for a range of oncology indications. Focussed on 3E10, a cell penetrating antibody.	-7.7%	-52.0%	\$0.012
Cellmid	CDY	12	Develops and markets therapies and diagnostic tests for fibrotic diseases, cancer, ischemic diseases of the heart and hair loss.	-68.8%	-42.9%	\$0.100
Visioneering Technologies	VTI	12	Markets a next-generation contact lens	8.3%	-75.9%	\$0.013
Heramed	HMD	11	Commercialising a home pregnancy monitoring technology	-40.0%	-54.2%	\$0.087
Neuroscientific Biopharm.	NSB	11	Developing EmtinB, an LRP-1 receptor agonist for the treatment of Alzheimer's disease	0.0%	31.0%	\$0.190
Avecho Biotechnology	AVE	11	Commercialising a drug delivery system. Formerly Phosphagenics	250.0%	133.3%	\$0.007
Simavita	SVA	9	Commercialising an incontinence assessment technology.	-5.9%	-5.9%	\$0.016
Allegra Orthopeadics	AMT	9	A developer and manufacturer of prosthetic implants and medical devices.	-40.7%	-1.1%	\$0.089
StemCell United	SCU	8	Applies a proprietary stem cell technology to culture and grow plant extracts for use in Traditional Chinese Medicine.	44.4%	-7.1%	\$0.013
Asian American Medical Group	AJJ	8	Manages liver treatment centres in Asia; expanding into radiation oncology	-20.0%	-80.0%	\$0.024
Rhythm Biosciences	RHY	8	Developing Colostat, a blood test for the early detection of colorectal cancer	51.9%	-56.1%	\$0.079
Analytica	ALT	7	Markets the Pericoach product to aid in the management of female urinary incontinence.	0.0%	-50.0%	\$0.002
Living Cell Technologies	LCT	7	Development of NTCELL for the treatment of Parkinson's Disease, and potentially for eye and ear diseases	33.3%	-50.0%	\$0.012
Amplia Therapeutics	ATX	7	Developing drug candidates to treat fibrotic cancers and fibrosis. Formerly Innate Immunotherapeutics.	115.5%	28.9%	\$0.125
Medibio	MEB	7	Commercialising a test for depression and anxiety	0.0%	-33.3%	\$0.006
Anatara Life Sciences	ANR	6	Developing a gastrointestinal dietary supplement	-18.8%	-49.0%	\$0.130
Bioxyne	BXN	6	Sale and distribution of probiotics	25.0%	-44.4%	\$0.010
Cryosite	CTE	6	Provides specialised storage services, especially for umbilical cord blood	80.6%	160.0%	\$0.130

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
GI Dynamics	GID	5	DELISTING	0.0%	-89.7%	\$0.003
Suda Pharmaceuticals	SUD	5	Developing drugs for oro-mucosal administration. Recently acquired IP for anagrelide, with intent to develop it as an anti-cancer therap. Completed 25:1 consolidation.	-24.5%	-50.7%	\$0.037
Lifespot Health	LSH	4	Commercialising the Bodytel diagnostic software, which is deployed with its Medihale medical cannabis vaporiser system, as well as with patients with metabolic syndrome	-29.6%	-52.5%	\$0.038
Medigard	MGZ	3	SUSPENDED FROM TRADING	0.0%	0.0%	\$0.020
Jayex Healthcare	JHL	3	Commercialisation of the Enlighten patient workflow platform	20.0%	-62.5%	\$0.018
Dorsavi	DVL	3	Commercialising a wireless sensor movement monitoring system and products for use in the Elite Sports, OH&S and medical/physiotherapy markets	30.0%	-74.0%	\$0.013
Factor Therapeutics	FTT	3	Business under review following the failure of wound therapy VT001 to meet endpoints in Phase II trial	50.0%	-25.0%	\$0.003
Neurotech International	NTI	2	Development and sales of Mente (and platform), a treatment for improving behaviours of people with autism and other neurological conditions	60.0%	-55.6%	\$0.008

Capitalisation Total **16,824**

Listed Biotech Investment Funds or Companies

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 30/06/20
BTC Health	BTC	24	Provides capital and management expertise to high-growth Australian biotech, medtech and pharmaceutical companies	23%	15%	\$0.098

Capitalisation Total **24**

Botanical Product Companies (Cultivated Production)

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 31/03/20
Elixinol Global	EXL	131	A supplier of hemp and medicinal cannabis products	30.8%	28.3%	\$0.680
Cann Group	CAN	113	Medicinal cannabis company focused on the breeding, cultivation and production stages. Holds Australian ODC cultivation (MC) and research license (CR).	14.5%	-59.7%	\$0.790
Palla Pharma	PAL	101	Licensed poppy producer. Narcotic raw material processor. Holds Australian ODC cultivation (MC) and research license (CR). Formerly TPI Enterprises.	45.5%	-24.5%	\$0.800
Althea Group	AGH	75	Supply of branded medicinal cannabis products in Australia. To cultivate, extract and manufacture medicinal cannabis. Holds ODC manufacturing license.	18.5%	-68.3%	\$0.320
Little Green Pharma	LGP	47	Sale and distribution of medicinal cannabis products	16.7%		\$0.350
THC Global Group	THC	46	A medicinal cannabis company formed through the acquisition of Canndeo, an off-shoot of Agri Fibre Industries. Holds Australian ODC cultivation (MC) and research license (CR).	27.9%	-36.0%	\$0.275
Auscann Group Holdings	AC8	43	Developing medical cannabis products for the Australian market. Holds Australian ODC cultivation (MC) and manufacture license and TGA manufacture license.	-28.9%	-59.7%	\$0.135
Zelira Therapeutics	ZLD	41	Developer of medicinal cannabis therapeutic products	58.8%	35.0%	\$0.054
Medlab Clinical	MDC	40	Development, production and marketing of nutraceuticals. Also developing cannabis product to treat cancer patients with intractable pain.	-21.1%	-57.1%	\$0.150
Impression Healthcare	IHL	34	Seeking to obtain Commonwealth and state licenses to import, store, distribute and export medicinal cannabis, while diversifying from its dental products business	27.8%	15.0%	\$0.046
Bod Australia	BDA	25	Developer and distributor of natural, evidence-based cosmetics and natural medicines. Holds medicinal cannabis import license. Overseas partner is Linnea SA.	38.5%	-20.6%	\$0.270
Cann Global	CGB	13	Operates a hemp seeds business and conducts medical cannabis research	-28.6%	-86.5%	\$0.005
Creso Pharma	CPH	11	Development of cannabis and hemp derived therapeutic, nutraceutical, and life style products with wide patient and consumer reach for human and animal health.	-47.5%	-94.1%	\$0.031
CannPal Animal Therap.	CP1	11	Research and development of cannabis-based therapeutics for companion animals	40.2%	-23.3%	\$0.115
eSense Health	ESE	10	Specialises in phytochemical profiling of plants to develop and reverse engineer terpenes for medical and other applications.	280.0%	11.8%	\$0.019
Cronos	CAU	9	Medicinal cannabis health and wellness business	-66.0%		\$0.068
Fiji Kava	FIJ	5	Cultivation and development of kava (piper methysticum) as an alternative treatment for anxiety, pain and insomnia.	55.3%	-8.8%	\$0.073
MGC Pharmaceuticals	MXC	3	A medical and cosmetic cannabis company with growing operations in Slovenia. Acquired Czech company Panax Pharma.	17.6%	-61.5%	\$0.020

Capitalisation Total **758**

Capitalisation Total - All Indices **203,668**

How Bioshares Rates Stocks

For the purpose of valuation, Bioshares divides biotech stocks into two categories. The first group are stocks with existing positive cash flows or close to producing positive cash flows. The second group are stocks without near term positive cash flows, history of losses, or at early stages of commercialisation. In this second group, which are essentially speculative propositions, Bioshares grades them according to relative risk within that group, to better reflect the very large spread of risk within those stocks. For both groups, the rating “Take Some Profits” means that investors may re-weight their holding by selling between 25%-75% of a stock.

Group A

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

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

Group B

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

Speculative Buy – Class A

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

Speculative Buy – Class B

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

Speculative Buy – Class C

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

Speculative Hold – Class A or B or C

Sell

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