

Subscribe to
Bioshares
\$470/
48 issues

More details can be found
on the back page

Companies covered: **September Quarter Review**

	Bioshares Portfolio
Year 1 (May '01 - May '02)	21.2%
Year 2 (May '02 - May '03)	-9.4%
Year 3 (May '03 - May '04)	70.6%
Year 4 (May '04 - May '05)	-16.3%
Year 5 (May '05 - May '06)	77.8%
Year 6 (May '06 - May '07)	17.4%
Year 7 (May '07 - May '08)	-36%
Year 8 (May '08 - May '09)	-7.4%
Year 9 (May '09 - May '10)	50.2%
Year 10 (May '10 - May '11)	45.4%
Year 11 (May '11 - May '12)	-18.0%
Year 12 (May '12 - May '13)	3.1%
Year 13 (May '13 - 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 - current)	9.6%
Cumulative Gain	777%
Av. Annual gain (17 yrs)	17.1%

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 - Editor/Analyst

Ph: (03) 9326 5382
Email: blake@bioshares.com.au

Mark Pachacz - Editor/Analyst

Ph: 0403 850 425
Email: pachacz@bioshares.com.au

Individual Subscriptions (48 issues/year)
\$470 (Inc.GST)
Edition Number 763 (28 September 2018)

Copyright 2018 Blake Industry and Market Analysis Pty Ltd. ALL RIGHTS RESERVED.
Secondary electronic transmission, photocopying, reproduction or quotation is strictly prohibited without written consent of the publisher.

Bioshares

28 September 2018

Edition 763

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

Quarterly Review

Three Billion Dollar Companies Lead the Bioshares Index

The **Bioshares Index** increased 8.3% in the September quarter, from the previous quarter, with 5% of that 8.3% attributed to a 100% increase in the share price of Clinuvel Pharmaceuticals for the period. That company closed the quarter with a capitalisation of \$1.054 billion, joining a peer group of Nanosonics (\$1.076 billion) and Mesoblast (\$1.019 billion).

Clinuvel Pharmaceuticals was one of two life science stocks added to the ASX/S&P 300 Index towards the end of the September quarter, the other stock being Polynovo (\$395 million).

Clinuvel's share price has appreciated by 227% over the last 12 months. The company posted its second consecutive profit (FY2018: \$13 million) and announced a 2 cent per share dividend. The company has before the FDA a new drug application (NDA) for Scenesse, its implantable, slow release drug for the treatment of erythropoietic protoporphyria (EPP), or sun intolerance. The drug received EMA approval for the EU in 2014.

Clinuvel's progress to a leading position in the Bioshares Index offsets Sirtex Medical's removal from the Official List of the ASX, following its acquisition by Chinese groups, CDH Genetech and China Grand Pharmaceutical and Healthcare Holdings for \$33.60 per share, or approximately \$1.9 billion on a fully diluted basis (but an enterprise value of \$1.8 billion).

The **Bioshares Large Cap Index** increased by 5.6% over the September quarter, with CSL ahead by 4% (Cap'n: \$91 billion), Resmed up 13% (\$22.6 billion), Cochlear steady (\$11.6 billion), Blackmores down 7% (\$2.3 billion) and Mayne Pharma up 49% (\$2 billion).

The Nasdaq Biotech Index posted an 11.2% gain in the September quarter, and was up 21% from a low in April. One recent contributor to this growth was Amarin, which rose 443% from its September 21 close to finish the quarter at \$US16.35 (Cap'n: US\$4.8 billion). The company released data showing that its pure EPA capsule (Vascepa) achieved a 25% relative risk reduction of major cardiovascular events in a study of 8,179 statin-treated adults with elevated CV risk.

Index Performance by Quarter (Change from previous Qtr)

	Q3 2017 [^]	Q4 2017 ^{**}	Q1 2018	Q2 2018	Q3 2018
Bioshares Index	-6.2%	10.6%	2.8%	0.4%	8.3%
Bioshares Large Cap Index	-2.6%	7.8%	8.9%	20.5%	5.6%
Bioshares MedCann Index		53.4%	9.6%	-1.9%	-5.2%
Nasdaq Biotech Index	7.6%	-3.9%	-0.1%	2.8%	11.2%
ASX 300 Index	-0.6%	6.9%	-4.9%	7.5%	-0.2%

^{**}Medicinal Cannabis stocks moved from Bioshares Index to separate index

^{*}MYX and SIP included in Bioshares Large Cap Index from Q1 2017

[^]SRX and SIP moved back to Bioshares Index

Bioshares Index – Top 10 Outperformers – Sept Quarter

Company	Code	Cap. \$m	Change - Quarter	Change - Year	Price 28/09/18
Biotron	BIT	21	116%	116%	\$0.041
Genetic Signatures	GSS	78	103%	92%	\$0.750
Clinuvel Pharmaceuticals	CUV	1054	100%	227%	\$22.030
Allegra Orthopaedics	AMT	21	100%	40%	\$0.210
IDT Australia	IDT	45	93%	123%	\$0.185
Simavita	SVA	10	88%	15%	\$0.030
Volpara	VHT	173	80%	41%	\$0.900
Rhinomed	RNO	33	63%	78%	\$0.285
Regeneus	RGS	40	58%	27%	\$0.190
ResApp Health	RAP	146	56%	213%	\$0.210

Capital Raisings

ASX-listed life science companies raised \$209 million in the September quarter, significantly more than the \$137 million raised in the June quarter but slightly less than the \$220 million worth of March quarter inflows

Elixinol Global, a US cannabidiol-hemp oil firm which listed in January with a \$20 million IPO, topped the list of capital raisings for the quarter with a \$40 million placement. Bell Potter managed both capital raisings. Bell Potter has also either led or co-managed nearly \$200 million of the \$565 million raised this year by ASX biotechs.

While companies such as Avita Medical and Visioneering initiated funding rounds to support market development, others such as Pharmaxis undertook strategic raisings. Pharmaxis' \$24 million raising arguably supplied defensive capital ahead of partnering discussions but also introduced a new life science-focused investor, Arix Bioscience plc, to its register.

Outperformers

Biotron posted the greatest gain of stocks in the Bioshares Index in the September quarter, with a 116% increase, which lifted the company's capitalisation to \$21 million. The company released analysis of its Phase II trial of BIT225, an HIV-1 targeted drug.

The company said that "BIT225 attacks HIV-1 growing in macrophages, resulting in production of replication-incompetent virus." Biotron's thesis is that BIT-225 eliminates HIV-1 which persists in reservoir cells, even when patients are being treated with what is generally considered to be an effective treatment (combination anti-retroviral therapy).

Genetic Signatures shares increased by 103% over the quarter, in response to it securing a major contract with an Australian pathology business, and the release of a new respiratory pathogen detection kit. However, it should be noted that its test is mostly relevant to the flu season (~1,000 tests/day) compared to out of season (~100-200 tests/day).

Bioshares Index - Bottom 10 Underperformers – Sept Quarter

Company	Code	Cap. \$m	Change - Quarter	Change - Year	Price 28/09/18
Neuren Pharmaceuticals	NEU	124	-59%	-20%	\$1.230
Medibio	MEB	12	-55%	-86%	\$0.061
Race Oncology	RAC	7	-55%	-72%	\$0.095
Visioneering Tech.	VTI	40	-54%		\$0.165
Suda Pharmaceuticals	SUD	10	-50%	-81%	\$0.004
Admedus	AHZ	48	-41%	-48%	\$0.135
Bio-Gene Technology	BGT	16	-35%		\$0.130
Patrys	PAB	41	-33%	90%	\$0.038
AFT Pharmaceuticals	AFP	195	-33%	-11%	\$2.000
Adherium	ADR	14	-33%	-38%	\$0.081

Shares of Clinuvel Pharmaceuticals, as previously discussed, doubled over the quarter, as did those of Allegra Orthopaedics, whose shares, however, are thinly traded.

IDT Australia's stock undertook a resurgence, with a 93% rise over the quarter. The company announced that it entered into a manufacturing agreement with medicinal cannabis company Cann Group in early August.

Other top performers included Simavita (+88%), Volpara (+80%), Rhinomed (+63%), Regeneus (+58%) and ResApp Health (+56%).

Underperformers

Neuren Pharmaceutical's shares slumped by 59% over the quarter. The company announced a licensing deal on August 6 for trofenitide for Rett Syndrome and other indications, covering North America, with ACADIA Pharmaceuticals. Deal terms included a \$US10 million (\$13 million) upfront payment and potential milestone payments of up to US\$455 million, as well as tiered, escalating double digit royalties on sales. Expectations of much bigger deal terms would explain the fall in Neuren's share price.

Medibio's shares fell by 55% over the quarter (and were down 86% from a year ago). The company released data from a 230 patients study in which it was seeking to detect major depressive disorder. The company's diagnostic aid was 70% sensitive in detecting depression after four assessments, and was 71% specific, but furthermore were not statistically significant. The results ran counter to MACH-3 study results, which showed the technology was 84% sensitive and 78% specific. An implication of the data is that the company will probably need to initiate studies with an improvement to its algorithm, trial protocols and patient selection, as we argued in *Bioshares* 761, to achieve an accuracy of around 80% to warrant commercial and clinical attention.

Race Oncology shares declined by 55% over the quarter, Visioneering by 54% and SUDA Pharmaceuticals by 50%. SUDA was compelled to raise capital following a settlement reached with German firm HC Berlin Pharma, which left them with an obligation of €1.4 million.

Bioshares

Company	Code	Investment Manager or Investor	Type of Raising	Funds Raised (\$M)
Elixinol Global	EXL	Bell Potter	Placement	\$40.0
Auscann	AC8	Canaccord Genuity	Placement	\$33.4
Auscann	AC8		SPP	\$1.9
Medical Developments	MVP		Placement	\$17.0
Medical Developments	MVP		SPP	\$7.5
Pharmaxis	PXS	Arix Bioscience plc	Placement	\$24.0
AirXpanders	AXP	Canaccord Genuity	Rights Issue	\$15.7
AirXpanders	AXP	Vivo Ventures	Placement	\$4.6
Cellmid	CDY		Placement	\$9.0
Cellmid	CDY		SPP	\$1.0
Visioneering	VTI		SPP	\$0.344
Visioneering	VTI	Canaccord Genuity	Placement	\$8.8
Imugene	IMU		Rights Issue	\$8.1
Resapp Health	RAP	Morgans Corporate	Placement	\$7.5
Actinogen Medical	ACW	Biotechnology Value Fund	SPP (+ Shortfall Placement)	\$1.5
Actinogen Medical	ACW	Biotechnology Value Fund	Placement (T2)	\$5.6
SUDA Pharmaceuticals	SUD		Rights Issue	\$6.1
SUDA Pharmaceuticals	SUD		Placement	\$0.7
Bod Australia	BDA	Tribeca Investment Partners	Placement	\$6.4
Bluechiip	BCT	CCZ Statton Equities	Placement	\$5.5
Phylogica	PYC		Placement (T1)	\$4.4
Sienna Diagnostics	SDX	Merchant Corporate Advisory	Rights Issue	\$3.6
Admedus	AHZ	Star Bright Holding	Placement	\$3.40
Invitrocue	IVQ		Placement	\$3.4
Avita Medical	AVH	Bell Potter	Placement (T2)	\$3.2
GI Dynamics	GID		Placement	\$3.0
Creso Pharma	CPH		Option Entitlement Issue	\$2.6
Memphasys	MEM	Peters Investments	Placement (T2)	\$0.35
Affinity Energy and Health	AEB	MEF I,L.P. (Magna)	Convertible Notes	\$0.27
Mediguard	MGZ		Placement	\$0.175
Althea Group	AGH	PAC Partners	IPO	\$19.7
Total raised in Q3 2018				\$208.7
Total raised in Q2 2018				\$136.7
Total raised in Q1 2018				\$220.1
Total raised YTD 2018				\$565.4

Selected Clinical Trial Developments - Q3 2018

Company	Code	Product/Therapeutic	Event
Actinogen Medical	ACW	Xanamem (Alzheimer's disease)	131 pts enrolled in Phase II trial , 75% of 174 in total.
Antisense Therapeutics	ANP	ATL1102 (Duchenne Muscular Dystrophy)	Dosed first patient in 9 pt trial. (Pts are non-ambulant)
Bod Australia	BDA	ECs315 Wafferix (Cannabis Wafer Product) (sub-lingual)	Initiated a 24pt, Phase I, open label, randomised, placebo controlled, four-way crossover study to determine the safety, tolerability, and pharmacokinetics of ECs315 administered as a single or multiple sublingual wafer and oil to healthy volunteers
Biotron	BIT	BIT225 (HIV)	Phase II trial of BIT225 in combination with cART (combination antiretroviral therapy). Reported that drug was well tolerated at 200mg once daily, for 27 pts. and that the drug attacks HIV-1 growing in macrophage cells, resulting in the production of replication-incompetent virus i.e. non-infectious, dead virus.
Bionomics	BNO	BNC210 (PTSD)	Completed treatment of pts in randomised, double-blind, placebo controlled Phase II trial; 193 pts
CardieX	CDX	Wearable blood pressure sensors (Blumio), Pressure wave analysis (Cardiex)	8 week, 15 person trial confirmed that Blumio's sensors returned a high degree of cardiovascular blood pressure data as measured by CardieX's pressure wave analysis technology
Ellex Medical Lasers	ELX	Ellex 2RT Retinal Rejuvenation Therapy (intermediate AMD)	Primary endpoint not met but achieved a four-fold reduction in rate of progression to late stage AMD in 76% of pts who received Ellex 2RT, over 36 month study period.
Factor Therapeutics	FTT	VF001-DP (wound healing, venous leg ulcers)	Reported in early September that only 8 pts (of 156) remained to complete treatment, and that last pt would have final treatment in early October. Topline results expected in November.
Imugene	IMU	IMU-131 (HER-Vaxx) (cancer vaccine)	Completed recruitment in 18 pt Phase Ib trial. No toxicities were observed. All pts developed immune responses and antibodies to the HER-2 protein.
Medibio	MEB	Depression Diagnostic Aid (Major Depressive Episode)	230 pt study. Reported 70% accuracy, 70% sensitivity and 71% specificity.
Mesoblast	MSB	remestemcel-L (allogeneic mesenchymal stem cell)	Open label, 55 pediatric pts, Phase III trial. Met primary endpoint of Day 28 overall response of 69% versus 45% in historical control. In positive OR pts, day 180 survival was 79%.
Neurotech International	NTI	Mente Autism device	In 12 week trial comparing device to sham, device was shown to produce significant reductions on Delta, Theta and high Beta brain waves, and significant reduction in autistic behaviours. 34 of 83 subjects completed trial.
Oncosil Medical	OSL	Oncosil (targeted radioactive isotope - Phosphorus32) (pancreatic cancer)	PanCo Study: 50 pts enrolled. Of 41 implanted, partial responses for 9, and 6 enabled to have surgical resection.
Paradigm Biopharmaceuticals	PAR	Pentosan Polysulphate Sodium (PPS) (Ross River virus)	Completed recruitment in randomised, double-blinded placebo-controlled, 20 pt trial (originally 24 planned).
Prana Biotech	PBT	PBT434 (Parkinsonian diseases)	Dosed first patients in healthy volunteers study
Prescient Therapeutics	PTX	PTX-200 (relapsed or refractory acute myeloid leukemia)	13 of 15 pts completed Phase Ib trial, in combination with cytarabine. Observed some peculiar toxicities in three pts. Two CRs reported.
ResApp Health	RAP	ResAppDx (smartphone app for the diagnosis childhood acute respiratory disease using cough sounds)	Completed enrolment in 681 pediatric pts study

Bioshares Model Portfolio (28 Sept 2018)							Portfolio Changes – 28 September 2018
Company	Code	Price (current)	Price added to portfolio	Recommend- ation	Cap'n (\$M)	Date added	
Clinuvel Pharmaceuticals	CUV	\$22.03	\$4.15	Take Some Profits	\$1,054	December 2014	IN: No changes
Bionomics	BNO	\$0.500	\$0.295	Spec Buy A	\$241	March 2016	
Volpara Health Technologies	VHT	\$0.900	\$0.375	Spec Buy A	\$161	June 2017	OUT: No changes
Somnomed	SOM	\$1.885	\$0.94	Buy	\$117	January 2011	
Opthea	OPT	\$0.585	\$0.160	Spec Buy A	\$118	November 2014	
Pharmaxis	PXS	\$0.310	\$0.260	Spec Buy A	\$122	December 2016	
Cogstate	CGS	\$0.570	\$0.515	Spec Buy A	\$65	August 2018	
Micro-X	MX1	\$0.390	\$0.38	Spec Buy A	\$56	May 2017	
Factor Therapeutics	FTT	\$0.072	\$0.041	Spec Buy B	\$60	March 2018	
AcruX	ACR	\$0.220	\$0.31	Spec Buy A	\$37	July 2017	
Visioneering Technologies	VTI	\$0.165	\$0.435	Spec Hold B	\$32	March 2017	
Adalta	1AD	\$0.270	\$0.23	Spec Buy A	\$27	July 2017	
Rhinomed	RNO	\$0.285	\$0.320	Spec Buy B	\$33	December 2015	
AirXpanders	AXP	\$0.110	\$0.745	Spec Buy B	\$61	September 2015	
Adherium	ADR	\$0.081	\$0.495	Spec Buy A	\$14	May 2016	

The ASX-Listed Life Sciences Sector
September 28, 2018: Capitalisation \$143 billion, 138 companies

Bioshares Large Cap. Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
CSL	CSL	91,038	Manufactures pharmaceutical products including vaccines and human plasma fractions	4%	50%	\$201.11
Resmed Inc.	RMD	22,643	Manufactures diagnostic and treatment equipment for sleeping disordered breathing	13%	63%	\$15.87
Cochlear	COH	11,574	Manufactures cochlear hearing implants	0%	26%	\$200.64
Blackmores	BKL	2,283	Manufactures vitamin, mineral and herbal supplements and skin & hair products in Australia and N.Z.	-7%	12%	\$132.42
Mayne Pharma Group	MYX	2,044	Manufactures, develops and markets generic drugs, with operations in Australia and the USA	49%	97%	\$1.300

Capitalisation Total 129,583

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
Nanosonics	NAN	1076	Developing a novel disinfection technology, the first product is a point of care ultrasound probe disinfection unit, branded Trophon EPR	14%	38%	\$3.590
Clinuvel Pharmaceuticals	CUV	1054	Markets an analogue of the alpha-MSH protein, named Scenesse, as a photo-protective agent. Approved in Europe.	100%	227%	\$22.030
Mesoblast	MSB	1019	Developing cellular medicines based on its proprietary mesenchymal lineage adult stem cells for high, unmet medical needs including advanced heart failure, chronic low back pain, acute graft versus host disease and inflammatory conditions such as biologic refractory rheumatoid arthritis.	45%	57%	\$2.150
API	API	849	Pharmaceutical wholesaler	1%	16%	\$1.725
Sigma Pharmaceuticals	SIG	667	Pharmaceutical manufacturing and wholesaling	-22%	-24%	\$0.630
Starpharma Holdings	SPL	587	Developer of pharmaceutical chemical scaffolds known as 'dendrimers'	36%	24%	\$1.585
Polynovo	PNV	395	Developing novel polymer-based products for treating wounds and burns	12%	114%	\$0.600
Medical Developments	MVP	274	Commercialising the Pentrox inhaler for temporary pain relief. Used widely in ambulances across Australia.	-28%	-19%	\$4.190
Clovercorp	CLV	258	Development and production of omega-3 food additives from tuna oil	-4%	251%	\$1.560
Bionomics	BNO	241	Developing drugs to treat cancer and CNS diseases, and has also developed a gene diagnostic for epilepsy.	-6%	5%	\$0.500
AFT Pharmaceuticals	AFP	195	Development and sale of pharmaceuticals in Australasia and Rest-of-World	-33%	-11%	\$2.000

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
Invion	IVX	187	Development of Photosoft, a photosensitiser derived from chlorophyll, which it is believed can accumulate selectively in tumours and be manipulated for therapeutic purposes.	0%	580%	\$0.034
Volpara	VHT	173	Markets breast density assessment tools and analytics, for use with breast X-ray screening programs	80%	41%	\$0.900
Impedimed	IPD	172	Markets products that aid the diagnosis of secondary lymphoedema, muscle wasting and other disorders	15%	-43%	\$0.455
Telix Pharmaceuticals	TLX	163	Development of molecularly-targeted radiation (MTR) therapies and diagnostics	23%		\$0.825
ResApp Health	RAP	146	Developing digital healthcare solutions to diagnose and manage respiratory conditions	56%	213%	\$0.210
Immutep	IMM	143	Developing immuno-oncology drug candidates IMP761 and IMP321 (eftilagimod alpha)	52%	81%	\$0.047
Avita Medical	AVH	141	Markets ReCell, a skin repair product	52%	59%	\$0.105
Cynata Therapeutics	CYP	131	Stell cell technology company aiming to produce unlimited uniform, pharmaceutical grade MSCs from a single donor.	-5%	98%	\$1.300
Oncosil Medical	OSL	125	Developing Oncosil, a brachytherapy for pancreatic cancer and liver cancer	-13%	74%	\$0.200
Neuren Pharmaceuticals	NEU	124	Developing neuroprotective therapeutics.	-59%	-20%	\$1.230
G Medical	GMV	123	Developing next generation mobile health and e-health devices, and cloud and medical call centres	47%		\$0.345
Pharmaxis	PXS	122	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.	0%	17%	\$0.310
Opthea	OPT	121	Developing OPT-302 to treat wet AMD (an eye disease)	11%	-19%	\$0.585
Somnomed	SOM	117	Markets oral devices for the treatment of sleep apnea and snoring.	-14%	-51%	\$1.885
Paradigm Biopharm.	PAR	114	Development of existing approved drug, pentosan polysulphate sodium to treat bone marrow oedema and joint pain	39%	192%	\$0.905
Reva Medical	RVA	104	Developing the Fantom scaffold, its third version of a bioresorbable coronary stent	11%	-66%	\$0.250
Ellex Medical Lasers	ELX	101	Develops, manufactures and markets solid state ophthalmic lasers used to treat secondary cataracts and retinal disorders.	15%	-36%	\$0.700
Probiotec	PBP	92	Manufacturer, marketer and distributor of a range of over the counter (OTC) pharmaceuticals, complementary medicines and speciality ingredients	27%	161%	\$1.460
Compumedics	CMP	80	Develops, manufactures and markets sleep diagnostic and monitoring equipment.	-18%	23%	\$0.450

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
Noxopharm	NOX	79	Developing a cancer treatment, NOX66, a formulation of idronoxil, which targets NADH oxidase 2.	7%	106%	\$0.650
Genetic Signatures	GSS	78	Development and sale of molecular diagnostics(MDx) kits and products	103%	92%	\$0.750
Imugene	IMU	76	Developing a Her2 positive cancer vaccine technology	-28%	40%	\$0.021
Osprey Medical	OSP	75	Markets DYEVERT, a device which reduces the amount of dye needed in imaging procedures	48%	-47%	\$0.222
Botanix Pharmaceuticals	BOT	74	Developing BTX1503 for the treatment of acne. BTX1503 combines synthetic cannabidiol with a transdermal drug delivery system, Permetrex.	-11%	123%	\$0.098
Cyclopharm	CYC	73	A nuclear medicine company that markets the Technegas lung imaging system	6%	41%	\$1.060
Phylogica	PYC	71	Developing peptide compound libraries for use in human therapeutics	19%	-23%	\$0.031
SDI	SDI	70	Manufacture & distribution of amalgam (fillings) & other dental materials and product R&D	18%	3%	\$0.590
Cogstate	CGS	68	Markets cognitive performance diagnostic products	-25%	-39%	\$0.570
AirXpanders	AXP	64	Design, manufacture and distributor of the Aeroform, a patient controlled tissue expander, for use in breast reconstruction after mastectomy	20%	-86%	\$0.110
Star Combo Pharma	S66	63	Develops, manufactures and markets nutritional and OTC products	-3%		\$0.840
Factor Therapeutics	FTT	60	Developing VF-001, for the treatment of venous leg ulcers and potentially to treat ocular conditions	53%	29%	\$0.072
Micro-X	MX1	56	Development of a mobile medical x-ray imager for hospitals, a version for deployed military use and a mobile security back-scatter imager	44%	-4%	\$0.390
Actinogen Medical	ACW	55	Developing Xanamem for the treatment of dementia in Alzheimer's disease patients	6%	-9%	\$0.051
Medadvisor	MDR	53	Medication adherence software platform company	-18%	14%	\$0.040
Vita Life Sciences	VLS	52	Development, manufacture and distribution of prescription and OTC medicines as well as complementary and alternative medicines, dietary supplements and health foods	19%	0%	\$0.950
Immuron	IMC	48	Sales and development of hyper-immune bovine colostrum products for therapeutic use	-1%	97%	\$0.335
Admedus	AHZ	48	Markets Cardiocel, a bio-scaffold	-41%	-48%	\$0.135
Benitec Biopharma	BLT	46	Developing innovative therapies based on a combination of gene therapy with ddRNAi gene silencing technology	33%	29%	\$0.180

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
Invitrocue	IVQ	46	Singapore-based analytical services company (life sciences).	-18%	6%	\$0.090
IDT Australia	IDT	45	Manufacturer of pharmaceutical ingredients to international standards for major pharmaceutical groups.	93%	123%	\$0.185
Respiri	RSH	43	Respiratory and pulmonary devices company. Markets Airsona, an ehealth product.	-6%	160%	\$0.091
Universal Biosensors	UBI	42	Development, manufacture and commercialisation of a range of in vitro diagnostic tests for point-of-care use	2%	-35%	\$0.240
OBJ	OBJ	42	Developing transdermal drug delivery technologies	-18%	-41%	\$0.023
Patrys	PAB	41	Developing novel antibody therapies for a range of oncology indications. Focussed on 3E10, a cell penetrating antibody.	-33%	90%	\$0.038
Asian American Medical Group	AJJ	41	Manages liver treatment centres in Asia; expanding into radiation oncology	14%	14%	\$0.120
Regeneus	RGS	40	Commercialisation of autologous adipose derived stem cells and factors. Markets HiQCell for human use and CryoShot for veterinary use.	58%	27%	\$0.190
Visioneering Technologies	VTI	40	Markets a next-generation contact lens	-54%		\$0.165
Acrux	ACR	37	Developer of topical generic drugs	52%	52%	\$0.220
Phosphagenics	POH	36	Commercialising a platform technology (alpha-tocopherol) , for human and animal applications.	44%	53%	\$0.023
Rhinomed	RNO	33	Developing nasal technologies with applications for sport performance, sleep and drug delivery.	63%	78%	\$0.285
Orthocell	OCC	33	Developing and marketing regenerative medicine products	-8%	-3%	\$0.295
Oventus	OVN	32	Developing an oral appliance to treat sleep apnea and snoring	-8%	-21%	\$0.300
Adalta	1AD	31	Developing AD-114 for the treatment of idiopathic pulmonary fibrosis (IPF) and other human fibrotic diseases	-27%	20%	\$0.270
Bluechip	BCT	31	Development, manufacture and commercialisation of a tracking system for biological samples	19%	94%	\$0.064
Cellmid	CDY	31	Develops and markets therapies and diagnostic tests for fibrotic diseases, cancer, ischemic diseases of the heart and hair loss.	-21%	-26%	\$0.370
Alcidion	ALC	29	Specialist health IT solution provide. Recently acquired MKM Health and Patient Track Holdings.	-10%	-10%	\$0.047
Mach 7 Technologies	M7T	28	Development and sales enterprise imaging management platform	0%	31%	\$0.210
Optiscan Imaging	OIL	27	Manufactures confocal microscopes for clinical diagnosis	-5%	-38%	\$0.062
Genetic Technologies	GTG	27	A diversified molecular diagnostics company embracing blockchain technologies across genomic testing platforms. Markets Brevagenplus, a breast cancer risk prediction tool.	10%	57%	\$0.011
Anatara Life Sciences	ANR	24	Refocusing activities on a human medical therapies, specifically a gastrointestinal reprogramming product	-23%	-63%	\$0.490

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
Bioxyne	BXN	24	Sale and distribution of probiotics	-26%	28%	\$0.037
Prana Biotechnology	PBT	23	Developing drugs to treat CNS diseases such as Alzheimer's and Parkinson's	-2%	-23%	\$0.043
Brain Resource Corp	BRC	22	Development and commercialisation of functional brain analysis techniques	2%	-30%	\$0.042
Vectus Biosystems	VBS	22	Developing an anti-fibrotic compound, VB0004, with applications in heart and kidney disease	12%	-24%	\$0.950
LBT Innovations	LBT	22	Developer of innovative products which deliver productivity benefits across a range of life science settings	-4%	-65%	\$0.110
USCOM	UCM	21	Markets Uscom, a non-invasive heart output function monitor, BP+ non-invasive central blood pressure product and digital ultrasonic spirometry products	-6%	-9%	\$0.155
Allegra Orthopedics	AMT	21	A developer and manufacturer of prosthetic implants and medical devices.	100%	40%	\$0.210
Sienna Cancer Diagnostics	SDX	21	Development and sale of an in vitro diagnostic, SCD-A7, as an adjunct to urine cytology, in the field of bladder cancer detection and diagnosis	29%		\$0.085
Biotron	BIT	21	Developing a drug to treat HIV	116%	116%	\$0.041
Kazia Therapeutics	KZA	20	Formerly Novogen. Developing GDC-084 for the treatment of glioblastoma multiform (a brain cancer).	-1%	5%	\$0.420
Analytica	ALT	20	Markets the Pericoach product to aid in the management of female urinary incontinence.	0%	20%	\$0.006
Imagion Biosystems	IBX	19	Developing MagSense, a diagnostic technology which exploits the principles of superparamagnetic relaxometry	33%		\$0.060
Proteomics International	PIQ	19	Provider of protein chemistry analytical services. Seeking to commercialise a diabetic kidney disease diagnostic.	18%	18%	\$0.235
CardieX	CDX	18	Development of wearable blood pressure measurement devices	50%	34%	\$0.039
GI Dynamics	GID	18	Commercialising the Endobarrier, an implantable polymer liner for the management of obesity and diabetes	-32%	-50%	\$0.023
Genera Biosystems	GBI	17	Develops, manufactures and distributes advanced molecular diagnostic tests, with a particular focus on women's health.	0%	19%	\$0.160
Living Cell Technologies	LCT	17	Development of NTCELL for the treatment of Parkinson's Disease, and potentially for eye and ear diseases.	20%	-83%	\$0.030
Dimerix	DXB	17	Developing a combination therapy, DMX200, to treat chronic kidney disease.	11%	-25%	\$0.105
Prescient Therapeutics	PTX	17	Developing compounds to treat various cancers	-29%	32%	\$0.078
Bio-Gene Technology	BGT	16	Commercialisation of the insecticides Flavocide (synthetic) and Qcide (plant-derived), in the fields of human health and crop protection.	-35%		\$0.130
Recce	RCE	16	Development of an antibiotic ("RECCE") as a cancer treatment	-8%	-10%	\$0.175
Rhythm Biosciences	RHY	15	Developing Colostat, a blood test for the early detection of colorectal cancer	-27%		\$0.150

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
Neurotech International	NTI	15	Development and sales of Mente (and platform), a treatment for improving behaviours of people with autism and other neurological conditions	-16%		\$0.135
ITL Health Group	ITD	15	Divested custom pack business. Now operates a DTC pathology test business, MyHealthTest and ITL BioMedical, which manufactures devices for clinical, laboratory and blood	-8%	-57%	\$0.170
Dorsavi	DVL	14	Commercialising a wireless sensor movement monitoring system and products for use in the Elite Sports, OH&S and medical/physiotherapy markets	-29%	-70%	\$0.085
Adherium	ADR	14	Commercialising the Smartinhaler range of devices that attach to prescription third-party inhalers, which improve compliance and efficacy	-33%	-38%	\$0.081
Anteo Diagnostics	ADO	14	Developer of a biological coatings technology that can be applied to immunoassays, bio-separations, drug delivery and other medical devices	-20%	-14%	\$0.012
Holista Colltech	HCT	13	Extracts collagen from sheepskins and markets natural healthcare products.	-8%	-32%	\$0.068
StemCell United	SCU	13	Applies a proprietary stem cell technology to culture and grow plant extracts for use in Traditional Chinese Medicine.	0%	0%	\$0.025
Medibio	MEB	12	Commercialising a test for depression and anxiety	-55%	-86%	\$0.061
Amplia Therapeutics	ATX	12	Developing drug candidates to treat fibrotic cancers and fibrosis. Formerly Innate Immunotherapeutics.	5%	-9%	\$0.300
Novita Healthcare	NHL	12	Design and development of training exercises that target core issues in early childhood and academic skills. Acquired Newly, and online matching marketplace which connects	-3%	6%	\$0.034
TBG Diagnostics	TDL	12	Development of HLA SSA and SBT diagnostic kits and related services	-13%	-50%	\$0.055
Resonance Health	RHT	10	Marketing the FerriScan technology, a non-invasive tool for measuring liver iron levels	8%	37%	\$0.026
Simavita	SVA	10	Commercialising an incontinence assessment technology	88%	15%	\$0.030
Suda Pharmaceuticals	SUD	10	Developing drugs for oro-mucosal administration. Recently acquired IP for anagrelide, with intent to develop it as an anti-cancer therapy	-50%	-81%	\$0.004
BARD1 Life Sciences	BD1	9	Developing cancer diagnostics and therapies. Lead program is the BARD1 lung cancer test. Acquired Swiss company BARD1AG.	-21%	38%	\$0.011
Race Oncology	RAC	7	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.	-55%	-72%	\$0.095
PharmAust	PAA	7	Manages Epichem, a drug discovery business. Also developing a veterinary anti-parasitic compound (PPL-1) as a human and animal cancer therapy.	-15%	-30%	\$0.035
Antisense Therapeutics	ANP	7	Developing antisense compounds to treat multiple sclerosis and Duchenne Muscular Dystrophy	-28%	-51%	\$0.018
Lifespot Health	LSH	6	Acquired Lifespot AG, which has been developing a system for the diagnosis and evaluation of skin diseases, and BodyTel AG, which has been developing a system for the	-30%	-38%	\$0.081

Bioshares Index

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
Memphasys	MEM	5	Developing a sperm separation technology, SpermSep. Completed a 1:15 share consolidation.	-13%	-71%	\$0.013
Jayex Healthcare	JHL	4	Commercialisation of the Enlighten patient workflow platform	-12%	-4%	\$0.022
Cryosite	CTE	3	Provides specialised storage services, especially for umbilical cord blood	-29%	-51%	\$0.064
Medigard	MGZ	3	Medical technologies innovation and research and development	31%	50%	\$0.021

Capitalisation Total 11,734

Medicinal Cannabis Companies (Cultivated Production)

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
Cann Group	CAN	381	Medicinal cannabis company focused on the breeding, cultivation and production stages. Holds Australian ODC cultivation (MC) and research license (CR).	-22%		\$2.730
Auscann Group Holdings	AC8	308	Developing medical cannabis products for the Australian market. Holds Australian ODC cultivation (MC) and manufacture license and TGA manufacture license.	-21%	116%	\$0.995
Elixinol Global	EXL	239	A supplier of hemp and medicinal cannabis products	33%		\$1.920
TPI Enterprises	TPE	122	Licensed poppy producer. Narcotic raw material processor. Holds Australian ODC cultivation (MC) and research license (CR).	9%		\$1.500
Althea Group	AGH	114	Supply of branded medicinal cannabis products in Australia. To cultivate, extract and manufacture medicinal cannabis.	298%	0%	\$0.595
Medlab Clinical	MDC	87	Development, production and marketing of nutraceuticals. Also developing cannabis product to treat cancer patients with intractable pain.	-13%	-33%	\$0.480
The Hydroponics Co.	THC	69	A medicinal cannabis company formed through the acquisition of Canndeo, an off-shoot of Agri Fibre Industries	3%		\$0.545
Creso Pharma	CPH	65	Development of cannabis and hemp derived therapeutic, nutraceutical, and life style products with wide patient and consumer reach for human and animal health.	-10%	9%	\$0.560
MMJ Phytotech	MMJ	64	Developing medical cannabis products for the Canadian market	-13%	-12%	\$0.290
Queensland Bauxite (to be renamed Cann Global)	QBL	56	To acquire 100% of Medcan Australia and 100% of Medical Cannabis Ltd. Medcan Australia has been granted an export and import license by the ODC.	0%		\$0.037
Zelda Therapeutics	ZLD	54	A medical cannabis company researching treatments for cancer, dermatological indications and for sleep disorders	-21%	3%	\$0.071
Bod Australia	BDA	41	Developer and distributor of natural, evidence-based cosmetics and natural medicines. Holds medicinal cannabis import license. Overseas partner is Linnea SA.	11%	471%	\$0.600

Medicinal Cannabis Companies (Cultivated Production)

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
CannPal Animal Therap.	CP1	15	Research and development of cannabis-based therapeutics for companion animals	-18%		\$0.165
Affinity Energy and Health	AEB	11	Investor in Uruguayan company Biogenics. Has applied to the Australian ODC to cultivate and produce medicinal cannabis	-40%		\$0.012
MGC Pharmaceuticals	MXC	6	A medical and cosmetic cannabis company with growing operations in Slovenia. Acquired Czech company Panax Pharma.	-27%	20%	\$0.048
eSense Health	ESE	3	Specialises in phytochemical profiling of plants to develop and reverse engineer terpenes for medical and other applications.	-46%		\$0.039

Capitalisation Total **1,635**

Listed Biotech Investment Funds or Companies

Company	Code	Cap. \$m	Principal Activities	Change - Quarter	Change - Year	Price 28/09/18
BTC Health	BTC	22	Provides capital and management expertise to high-growth Australian biotech, medtech and pharmaceutical companies	-13%	11%	\$0.175

Capitalisation Total **22**

Capitalisation Total - All Indices **142,974**

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

Corporate Subscribers: Cogstate, Bionomics, LBT Innovations, Opthea, ResApp, Pharmaxis, Dimerix, Cyclopharm, Adalta, Medibio, Pharmaust, Actinogen Medical, Patrys

Disclaimer:

Information contained in this newsletter is not a complete analysis of every material fact respecting any company, industry or security. The opinions and estimates herein expressed represent the current judgement of the publisher and are subject to change. Blake Industry and Market Analysis Pty Ltd (BIMA) and any of their associates, officers or staff may have interests in securities referred to herein (Corporations Law s.849). Details contained herein have been prepared for general circulation and do not have regard to any person’s or company’s investment objectives, financial situation and particular needs. Accordingly, no recipients should rely on any recommendation (whether express or implied) contained in this document without consulting their investment adviser (Corporations Law s.851). The persons involved in or responsible for the preparation and publication of this report believe the information herein is accurate but no warranty of accuracy is given and persons seeking to rely on information provided herein should make their own independent enquiries. Details contained herein have been issued on the basis they are only for the particular person or company to whom they have been provided by Blake Industry and Market Analysis Pty Ltd. The Directors and/or associates declare interests in the following ASX Healthcare and Biotechnology sector securities: Analyst DB:ACR,ADR,CGS,COH,CSL, CYC,MEB,NAN,OPT,OSP,PNV,SOM,TPE,UCM,VTI; Analyst MP: ACR, ADR, AXP,CGS,OPT,CUV, MX1, NAN, PXS,RNO,SOM, VTI. These interests can change at any time and are not additional recommendations. Holdings in stocks valued at less than \$100 are not disclosed.

Subscription Rates (inc. GST)

48 issues per year (electronic distribution): **\$470**

[For multiple email distributions within \$750 2-3 email addresses
the same business cost centre, our \$1010 4-5 email addresses
pricing structure is as follows: \$1280 6-10 email addresses]

To subscribe, post/fax this subscription form to:

Bioshares
PO Box 193 Richmond VIC 3121
Fax: +61 3 9329 3350

I enclose a cheque for \$ _____ made payable to **Blake Industry & Market Analysis Pty Ltd**, or

Please charge my credit card \$ _____ MasterCard Visa

Card Number

Signature _____ Expiry date _____

Subscriber details

Name _____

Organisation _____

Ph () _____

Emails _____
