



Biotech Daily

Friday November 22, 2019

Daily news on ASX-listed biotechnology companies

- * **ASX UP, BIOTECH DOWN: MEDICAL DEVELOPMENTS UP 16%; DIMERIX DOWN 8%**
- * **DR BOREHAM'S CRUCIBLE: PHYLOGICA**
- * **VIERTEL AWARDS \$425k FELLOWSHIPS, SCHOLARSHIPS**
- * **IMAGION RIGHTS RAISE \$3.6m**
- * **ANATARA RECEIVES \$847k R&D TAX INCENTIVE**
- * **PRESCIENT PLEADS SCHULTZ TO ASX 23% QUERY**
- * **OBJ, P&G 'HARMONIZE' AGREEMENTS, HIGHER ROYALTIES**
- * **MEDIBIO 70% OPPOSE NEW DIRECTORS IDE, WIPPERMAN-HEINE, OJALA**
- * **OVENTUS 32% OPPOSE 10% PLACEMENT FACILITY**
- * **PHARMAXIS AGM: 14% OPPOSE WILLIAM DELAAT RE-ELECTION**
- * **CANN GROUP 'STAGES' MILDURA MARIJUANA FACILITY**
- * **MGC, BRASILINVEST EXPAND MARIJUANA SALES IN LATIN AMERICA**
- * **DIRECTOR ANDREW GOODALL TAKES 23% IN MEMPHASYS**
- * **CHAIR ALISON COUTTS DILUTED TO 11% IN MEMPHASYS**
- * **CRAIG COOPER, NIALL CAIRNS, C2 CONVERT NOTES FOR CARDIEX 20%**
- * **DIRECTOR DENNIS ECK TAKES 8.5% OF CELLMID**
- * **ADHERIUM CEO DR PETER STRATFORD STARTS ON \$571k**

MARKET REPORT

The Australian stock market was up 0.55 percent on Friday November 22, 2019, with the ASX200 up 36.9 points to 6,709.8 points. Fourteen of the Biotech Daily Top 40 stocks were up, 19 fell, five traded unchanged and two were untraded.

Medical Developments was the best, up 99 cents or 15.8 percent to \$7.25, with 632,401 shares traded. Patrys climbed 14.3 percent; Prescient was up 10.8 percent; Antisense and Avita improved more than seven percent; Immutep was up 6.1 percent; Orthocell, Polynovo and Resonance were up more than three percent; Paradigm rose two percent; Clinuvel, Cochlear, CSL, Pro Medicus and Volpara were up one percent or more; with Mesoblast up 0.6 percent.

Dimerix led the falls, down one cent or 8.3 percent to 11 cents, with 554,391 shares traded. Impedimed and Imugene lost five percent or more; Nanosonics, Pharmaxis and Proteomics fell more than four percent; Alterity, Compumedics, Cynata, Genetic Signatures and Next Science were down more than three percent; Ellex, Neuren, Oncosil, Opthea, Optiscan and Universal Biosensors shed more than two percent; Resmed and Uscom were down more than one percent; with Starpharma down 0.8 percent.

DR BOREHAM'S CRUCIBLE: PHYLOGICA

ASX code: PYC

Share price: 6.2 cents

Shares on issue: 2,931,427,990*

Market cap: \$181.75 million*

Chief executive officer: Dr Rohan Hockings

Board: Alan Tribe (chairman), Dr Bernard Hockings, Dr Rohan Hockings

Financials (September quarter 2019): Revenue nil, cash burn \$2.1 million, cash of \$30.9 million*, estimated current quarter outflows \$2.6 million

* Including \$26.8 million capital raising, completed yesterday

Major identifiable holders: Alan Tribe/Australian Land Holdings 27.4%, Dr Bernard Hockings 13.0%, Sietsma Holdings 9.7%, Anthony Barton 5.0%.

Phylogica CEO Dr Rohan Hockings is blunt about the drug delivery outfit's erratic development path since listing 14 years ago.

"We were chasing all the rabbits and catching none," he says. "Investors were saying: 'You have this nice delivery system but what are you going to do with it?'"

Having applied its platform of "cell penetrating peptides" (formerly known as "phylomers") to multiple diseases over the years, Phylogica is confident that it has found its ideal bunny: a rare eye disease called retinosa pigmentosa.

"Things are coming together after a hard slog," Dr Hockings says.

The hard slog has indeed been rewarded in the most tangible of ways: investor support for a \$26.8 million rights offer that has replenished the company's coffers.

Phylogica's business has always been based on the same platform: a 'library' of peptides that are hooked-up with known drug 'cargoes' to improve the reach and efficacy of the molecules.

The key philosophy is that the highest value drug targets (including DNA) are inside the cells, but the clever cell membranes have evolved to keep out foreign matter.

"The company's techniques have always been the same; it's just that the [cell penetrating peptides] have improved," Dr Hockings says. "They are much higher performing and less toxic."

A spin off from the not-for profit medical research body Telethon Kids Institute, the Perth-based Phylogica listed a decade ago - on March 23, 2005 to be exact - raising \$5 million at 20 cents apiece.

The company's premise was to build a library of hundreds of billions of phylomers, which are protein fragments with active molecules that can fight diseases.

Quirkily, the genetic material that gives rise to these phylomers derives from extreme environments such as volcanoes, geysers and deep-sea vents.

Initially the company tackled inflammatory diseases, led by biotech man-about-town Dr Stewart Washer. Dr Washer was joined on the board by future medical marijuana mover-and-shaker Harry Karelis.

As it transpired, Dr Washer became the first of a revolving door of five CEOs, but to be fair Australia has had six PMs during that time (not counting Kevin Rudd's brief return bout).

Perth cardiologist Dr Bernard Hockings first appeared on the register in August 2012, initially with a 6.8 percent stake. If you haven't guessed it already, Bernard is Rohan's old man.

Phylogica is following the old marketing playbook of rebranding itself to PYC Therapeutics, probably to forget the past 15 years.

Not Lion around

Over time, a slew of impressive sounding collaborations with Pfizer (up to \$136 million), Medimmune (\$110 million plus), Johnson & Johnson and Astrazeneca went absolutely nowhere and the company struggled to disseminate its message in user-friendly terms.

Phylogica needed a lucky break and respite came in the guise of a drug candidate developed by Murdoch University molecular biologist, Prof Sue Fletcher.

Prof Fletcher is Phylogica's research and development chief. "She is like a national living treasure," Dr Hockings says.

Prof Fletcher and fellow Prof Steve Wilson invented eteplirsen (Exondys-51) which eventually became a blockbuster drug to treat Duchenne's muscular dystrophy (Exondys-51 is owned by Sarepta Therapeutics of the US).

Phylogica formed a joint venture called Vision Pharma with Lion's Eye Institute, a Perth not-for-profit research body.

In effect, Phylogica delivered the vehicle (the penetrating peptides) and Lion's Eye provided the molecule, known as an anti-sense oligonucleotide.

Phylogica had a 50 percent share of the joint venture, but has committed \$15 million to take its ownership to 90 percent. Of this amount, the institutional component of the rights offer will provide \$14.3 million.

“Up to now we were reliant on someone else,” Dr Hockings says: “We now have our own molecule and we can keep taking it forward in the clinic.”

Seeing you asked ...

Because you're dying to know, anti-sense oligonucleotides are a class of precision medicine.

The beauty of them is that they are made up of the same 'building blocks' (nucleotides) as DNA and the 'anti-sense' strand is the exact opposite sequence of the 'sense' strand of nucleotides in the DNA.

Over to you, Rohan: “This means that the anti-sense oligonucleotide is a perfect match for its target inside the cell and can 'silence' or 'knock down' a genetic defect represented by an error in the human genetic code in the DNA”.

“The potent and precise nature of the anti-sense oligonucleotides has led to multiple new drug approvals over the past couple of years for this class of therapeutic.”

About retinosa pigmentosa

Retinosa pigmentosa is a specific mutation that affects about 0.03 percent of children, or about 30 in 100,000. There are about 300,000 known sufferers.

The kids first lose their night vision, then their peripheral vision and eventually go completely blind.

Phylogica is addressing a sub-type which is only two to three percent of total cases, or 4,000 to 8,000 people in the Western world.

Dr Hockings said the company chose retinosa pigmentosa because there was no existing treatment and nothing upcoming in the clinic, either.

“It occurs in cells in the deepest layer of the retina,” he says. “We are addressing a condition that others can't because of the depth of the target cell that we are pursuing in the eye.”

He cites retinosa pigmentosa as a \$1 billion target market.

“Our patient population is equivalent to the Duchenne's muscular dystrophy population,” he says. As alert readers of this organ would be aware, Duchenne's muscular dystrophy is being targeted by fellow ASX-listee Antisense Therapeutics.

“Exondys-51 is a \$500 million a year drug and that's only approved in the US and not Europe,” Mr Hockings says.

In the lab

The company says mouse models delivered the drug four times more effectively than the “nearest competitor”.

We presume this to be a reference to Sarepta’s cell-penetrating peptide called RXR4, not be confused with a Wankel rotary engine Mazda model favored by 1970s hoons.

The company then turned to a novel ‘retina in a dish’ technique, by which a human eyeball was created on a bench top using 3-D techniques. Skin samples were turned back into a stem cell and then organized in the same cell layers of the retina.

The experiment reversed the disease, showing “more than 90 percent efficacy from a single dose”.

“It was done with remarkable fidelity,” Dr Hockings says. “It was a very good simulation.”

Repeat studies (and variations) are planned ahead of a planned visit to the US Food and Drug Administration with an investigational new drug application by July 2020.

If the FDA accedes, the company will launch a phase I trial with 10 patients whose tissues were used to grow the eyeballs in a dish. This is scheduled for the first half of 2021.

“We believe we can also progress to a combined pivotal [phase II/III] study in the second half of 2021,” Dr Hockings says.

Can’t win ‘em all

In 2014, Phylogica extended a collaboration with existing partner Genentech (a subsidiary of Roche) to discover novel antibiotics. As followers of fellow ASX dweller Recce will know, this is an increasingly urgent quest given growing resistance to current treatments.

Genentech delivered a \$US2 million (\$A2.9 million) milestone payment to Phylogica last quarter, with the promise of \$US140 million more. But fairytales rarely come true in biotech land and in November Phylogica reported the program has “concluded”, which is a nice way of saying it did not achieve what Genentech wanted.

Finances and performance

Post the underwritten one-for-five rights issue, Phylogica will have about \$30 million in the bank and also expects to pocket a \$2.5 million Federal R&D Tax Incentive.

This will be more than enough to cover the planned trial. “You only need 40 to 50 patients for a pivotal trial, so it’s really cheap,” Dr Hockings says.

The company last raised \$9.5 million 18 months ago, with chairman Alan Tribe and Dr Bernard Hockings stumping up seven-figure amounts.

The former owner of Ikea's Perth franchise, Mr Tribe accounts for 23 percent of the register. As well as being a handy funding source, Alan can assemble a board room table from scratch with an Allen key if needs be.

Over the last 12 months, Phylogica shares have traded between 2.2 cents (March 2019) and 6.6 cents (mid-October). A decade ago, they traded at 10 cents and have been as low as 1.2 cents. In early 2006, Phylogica peaked at 58 cents.

Dr Boreham's diagnosis:

It's self-evident, but worth stressing, that the retinosa pigmentosa program is in pre-clinical studies, only. Phylogica has other programs bubbling away for other indications including neuro-degenerative (brain) and genetic liver disorders, as well as oncology.

"We will have more for inherited retinal disease, in effect swapping one anti-sense oligonucleotide for another," Mr Hockings says.

Phylogica's original oncology program, Imyc, is still bubbling away. But the company has learned its lesson about past premature hyperventilation and will only communicate about the lead programs, so as not confuse investors.

On the ASX, Phylogica is roughly comparable with Opthea, but only because they are tracking eye diseases (but with different technologies).

On the Nasdaq, Stoke Therapeutics is developing anti-sense oligonucleotides for rare diseases and has a \$US1 billion market cap.

Dr Hockings says Stoke Therapeutics is at a similar stage of progress to Phylogica.

Dutch company Proqr, also listed on the Nasdaq, is also developing anti-sense oligonucleotides for retinal diseases and is at pivotal trial stage.

Proqr has a \$US500 million market cap. "But a minority of patients are responding, so they have some issues," Dr Hockings says.

On his frank assessment, Phylogica has been "in discovery stage for far too long and we have been very lucky to survive".

In reality, the odds are still stacked against the company getting anything commercialized.

But naysayers were also saying that about \$1.5 billion market cap Clinuvel, which is tackling a similar patient population for a rare skin disorder.

So hang on! Magic can happen in biotech land after all.

Disclosure: Dr Boreham is not a qualified medical practitioner and does not possess a doctorate of any sort. He once assembled an Ikea table from scratch and it stayed upright, which was just like magic.

THE SYLVIA AND CHARLES VIERTEL CHARITABLE FOUNDATION

Equity Trustees says the Viertel Charitable Foundation has awarded Prof Andrew Steer, Dr Tracy Putoczki and Dr Richard Berry \$1.25 million fellowships, each.

Equity Trustees said it managed the Sylvia and Charles Viertel Charitable Foundation and the 2019 Viertel senior medical research fellowships were for three mid-career Australian researchers investigating immunology, infectious diseases, and its role in the immune microenvironment in cancer, with from the Murdoch Children's Research Institute Prof Steer, the Walter and Eliza Hall Institute of Medical Research Dr Putoczki and Monash Biomedicine Discovery Institute's Dr Berry this year's winners.

The Walter and Eliza Hall Institute said Dr Putoczki won the fellowship to study how tumor communication helped cancers grow and spread.

The Institute said Dr Putoczki had spent 10 years investigating how cell-signalling molecules called cytokines influenced cancer and was part of a team that showed that interleukin-11 (IL-11) could stimulate the growth and spread of cancers.

Equity Trustees' general manager of charitable trusts and philanthropy Jodi Kennedy said, "medical research, and many innovations to advance our community, social, economic and health wellbeing, rely on philanthropy".

"For nearly 25 years Sylvia and Charles Viertel's legacy has been honoured through the fellowships and the establishment of an impressive alumni of medical researchers," Ms Kennedy said.

"The Sylvia and Charles Viertel Charitable Foundation funds two of the Fellowships," she said.

Ms Kenney said Equity Trustees combined the Viertel funding with funds from two other charitable trusts they managed, the Cross Family Trust and the Frank Alexander Charitable Trust, to create the third fellowship.

Equity Trustees said five one-year \$85,000 clinical investigation scholarships were awarded to the Hudson Institute of Medical Research's Dr Jun Yang, the Garvan Institute of Medical Research's Dr Amali Mallawaarachchi, the University of Sydney's Dr Nidhi Garg, Monash University's Dr Mastura Monif and Monash University's Dr Andrew Neal.

IMAGION BIOSYSTEMS

Imagion says it has raised \$3.6 million in a one-for-one, pro-rata, renounceable, partially underwritten rights issue at two cents a share.

Imagion said the offer closed on November 19, 2019 and it received applications for \$1,153,414.

The company said investors received a free listed option for every two new shares exercisable at five cents a share within two years.

Imagion said CPS Capital Group would take up the shortfall as lead manager and partial underwriter to the rights issue.

Imagion was unchanged at 13 cents.

ANATARA LIFESCIENCES

Anatara says it has received \$847,325 from the Australian Tax Office under the Federal Government Research and Development Tax Incentive program.

Anatara said the rebate related to research and development for the year to June 30, 2019.

Anatara was up three cents or 16.7 percent to 21 cents.

PRESCIENT THERAPEUTICS

Prescient has told the ASX that it is not aware of any information it has not announced which, if known, could explain recent trading in its securities.

The ASX said the company's share price rose 23.4 percent from 7.7 cents to 9.5 cents on November 19, 2019, and noted a "significant increase" in the trading volume.

Prescient was up 0.8 cents or 10.8 percent to 8.2 cents with 99.1 million shares traded.

OBJ

OBJ says it has two new licencing agreements with Procter & Gamble "to harmonize and unify" existing research, development and commercialization agreements.

OBJ said the agreements covered its permanent magnetic technology, electromagnetic technology, pre-programmed electromagnetic technology and programmable electromagnetic technology and it had renegotiated improved royalty rates.

OBJ was untraded at 1.5 cents.

MEDIBIO

Medibio says that more than 70 percent of annual general meeting votes opposed the election of directors Dr Lisa Ide, Lisa Wipperman Heine and Liwanag Ojala.

In August, Medibio said Ms Wipperman Heine, Dr Ide and Ms Ojala replaced directors Michael Phelps, Patrick Kennedy and Dr Frank Prendergast (BD: Aug 29, 2019).

Today, the company said 265,470,267 votes (70.5%) opposed the election of Dr Ide and Ms Wipperman Heine, with 265,670,267 votes (70.4%) against the election of Ms Ojala.

Medibio said the issue of options to Ms Wipperman Heine, Dr Ide and Ms Ojala were opposed by about 60 percent of votes.

The company said the election of directors Melanie Leydin, Claude Solitario and Peter Carlisle, the issue of options to Ms Leydin, Mr Carlisle and Mr Solitario, the 10 percent additional placement capacity, the ratification of the prior issue of shares and the renewal of the proportional takeover bid provision were all passed overwhelmingly.

Medibio said 47,351,065 votes (18.4%) opposed the remuneration report.

According to Medibio's most recent Appendix 3B the company had 995,130,039 shares on issue, meaning that the largest vote of 265,670,267 against the election of Ms Ojala amounted to 26.7 percent of the shares on issue, sufficient to requisition extraordinary general meetings.

Medibio fell 0.05 cents or 5.9 percent to 0.8 cents with 13.2 million shares traded.

OVENTUS MEDICAL

Oventus says all annual general meeting resolutions were passed except the 10 percent placement facility which was defeated by 32 percent of votes at the meeting.

Oventus said 19,780,424 votes (32.3%) opposed the 10 percent placement facility, with 41,529,758 votes (67.7%) in favor, with the resolution requiring a 75 percent majority.

The company said the adoption of the remuneration report, the re-election of directors Sharad Joshi and Sue MacLeman and the issue of options to directors Dr Chris Hart, Neil Anderson, Ms MacLeman, Mr Joshi and Dr Mel Bridges were all passed overwhelmingly.

According to Oventus' most recent Appendix 3B the company had 130,529,717 shares on issue meaning that the opposition to the placement facility amounted to 15.2 percent of the shares on issue, sufficient to requisition extraordinary general meetings.

Oventus fell two cents or 3.6 percent to 53 cents.

PHARMAXIS

Pharmaxis says all annual general meeting resolutions were passed easily except for the re-election of non-executive director William Delaat, which faced 14 percent dissent.

The Pharmaxis meeting results notice said that Mr Delaat faced opposition from 21,202,954 votes (13.8%) with 132,423,519 votes (86.2%) in favour, while the remuneration report, performance rights to chief executive officer Gary Phillips and the constitution amendment passed easily.

According to the Pharmaxis' most recent Appendix 3B, the company had 394,672,198 shares on issue, meaning that the votes against Mr Delaat amounted to 5.4 percent of the company, sufficient to requisition extraordinary general meetings.

Pharmaxis fell one cent or 4.3 percent to 22.5 cents.

CANN GROUP

Cann Group says it will adopt a staged approach to its Mildura marijuana production facilities rather than build them as a single stage development.

Cann Group chief executive officer Peter Crock said the decision would allow the company to "build capacity on a timetable that provides more certainty around capacity utilization while reducing the company's initial capital investment requirements".

The company said it would receive ongoing in-principle support for its revised plan from the unnamed "tier one Australian bank" that approved a \$95 million loan facility to assist the funding of the original construction.

Cann said it expected the first stage to provide for annual production of 25,000 kilograms of dry flower and stages two and three would be determined on product demand.

Cann Group fell five cents or 6.4 percent to 73.5 cents with two million shares traded.

MGC PHARMACEUTICALS

MGC says it has a binding term sheet with Brasilinvest for a joint venture, JV Co, to expand its marijuana product distribution into Brazil and Latin America.

MGC said JV Co would be incorporated with a 50 percent each ownership structure.

The company said it would access the São Paulo, Brazil-based Brasilinvest's network of medical professionals and manage operations of the joint venture, while Brasilinvest would register its products in Brazil and would establish physician relationships.

MGC was unchanged at 3.4 cents with 12.9 million shares traded.

MEMPHASYS

Memphasys director Andrew Goodall says he has increased his holding in Memphasys from 134,541,983 shares (21.57%) to 171,498,505 shares (23.36%).

Mr Goodall said he acquired the 36,956,522 shares through a placement.

Memphasys was up 0.1 cents or 1.7 percent to six cents.

MEMPHASYS

Memphasys executive chair Alison Coutts says her 79,625,139 share-holding has been diluted from 14.58 percent to 10.85 percent.

In October, Memphasys voted to issue 36,956,522 shares to directors and significant shareholders and approved a 10 percent placement capacity that issued 73,333,333 shares to Peters Investments and director Andrew Goodall.

CARDIEX

Cardiex says C2 Ventures will convert 640,303 notes into 21,343,425 shares at 3.0 cents a share to take more than 20 percent of the company.

In January, Cardiex said it had a \$2.5 million convertible note for C2 Ventures, owned by chief executive officer Craig Cooper and director Niall Cairns (BD: Jan 22, 2019).

Today, the company said C2 Ventures would have \$221,194 remaining in convertible notes, did not specify the C2 holding but said in its headline that the company would have a "holding above 20 percent".

Cardiex fell 0.2 cents or 6.9 percent to 2.7 cents with two million shares traded.

CELLMID

Las Vegas-based Cellmid director Dennis Eck says he has increased his substantial shareholding in Cellmid from 5,331,579 shares (6.40%) to 8,178,970 shares (8.47%).

Mr Eck said he acquired 130,000 shares on November 12, 2018 and 217,391 shares on November 20, 2019 in lieu of director's fees and bought 2,500,000 shares in the recent placement at 20 cents a share (BD: May 21, Oct 14, Nov 6, 2019).

Cellmid fell half a cent or 2.1 percent to 23.5 cents.

ADHERIUM

Adherium says it has hired Dr Peter Stratford as chief executive officer on a base pay of GDP300,000 (\$A570,698), with Mike Motion appointed chief commercial officer.

Adherium said interim chief executive officer Jeremy Cook and interim chief commercial officer Bill Hunter would both continue as non-executive directors.

The company said Dr Stratford would receive a short-term incentive of up to 100 percent of his base salary, with half in cash and half in shares, along with a long-term incentive of up to 6,800,000 shares at a 30-day volume weighted average price plus 10 percent.

The company said Dr Stratford had more than 30 years' experience in the pharmaceutical and medical device industries and was most recently the head of innovation at BTG Plc, formerly the UK state-owned British Technology Group, whose website said it had been acquired by Boston Scientific.

Adherium said Dr Stratford was previously group director of research and development and managing director for Biocompatibles International.

The company said Dr Stratford held a Bachelor of Science, a Master of Science and a Doctor of Philosophy and his LinkedIn page says he went to Lancaster University.

Adherium said Mr Motion had more than 35 years' corporate experience and was most recently general manager for interventional oncology and head of digital innovation at BTG and held roles in manufacturing, sales, marketing and commercial leadership at Baxter Healthcare and Biocompatibles.

Mr Motion's LinkedIn page said he held a Bachelor of Science from the Aberdeen, Scotland-based Robert Gordon University.

Adherium was up 0.3 cents or 7.9 percent to 4.1 cents.