



# Biotech Daily

Friday December 7, 2018

*Daily news on ASX-listed biotechnology companies*

- \* **ASX, BIOTECH UP: PARADIGM UP 15%; KAZIA DOWN 6%**
- \* **DR BOREHAM'S CRUCIBLE: MACH7 TECHNOLOGIES**
- \* **PHYLOGICA CLAIMS HSV-1 VACCINE EFFICACY IN 9 OF 12 MICE**
- \* **PARADIGM NEW DATA BACKS OSTEOARTHRITIS PAIN REDUCTION**
- \* **GENETIC SIGNATURES RECEIVES \$2.6m FEDERAL R&D TAX INCENTIVE**
- \* **ORTHOCELL REQUESTS CAPITAL RAISING TRADING HALT**
- \* **BRANDON, MRFCF, AUSTRALIAN SUPER HOLD 27% OF OSPREY**
- \* **ADAM LEITZES, KARST PEAK INCREASE, DILUTED TO 17.3% OF AVITA**
- \* **DEUTSCHE BANK (KARST PEAKE) QUILTS GENETIC SIGNATURES, AGAIN**

## MARKET REPORT

The Australian stock market rebounded 0.42 percent on Friday December 7, 2018 with the ASX200 up 23.8 points to 5,681.5 points.

Fourteen of the Biotech Daily Top 40 stocks were up, 10 fell, 12 traded unchanged and four were untraded. All three Big Caps were up.

Paradigm was the best, up 19 cents or 15.1 percent to \$1.45 with 888,448 shares traded.

Impedimed climbed 9.5 percent; Oncosil was up 7.9 percent; Neuren and Patrys improved four percent or more; Cochlear and Immutep were up three percent or more; CSL, Cynata and Pro Medicus rose more than two percent; Pharmaxis and Resmed were up more than one percent; with Ellex, Genetic Signatures, Medical Developments, Mesoblast and Opthea up by less than one percent.

Kazia led the falls, down 2.5 cents or 6.2 percent to 38 cents, with 18,865 shares traded, followed by Airxpanders down 6.1 percent to 3.1 cents with 908,630 shares traded.

Dimerix and Proteomics fell more than four percent; Actinogen, Clinuvel and Volpara shed two percent or more; Optiscan was down 1.8 percent; with Nanosonics and Telix down by less than one percent.

## DR BOREHAM'S CRUCIBLE: MACH7 TECHNOLOGIES

**By TIM BOREHAM**

**ASX Code:** M7T; **Share price:** 23.5 cents; **Market cap:** \$31.1 million

**Shares on issue:** 132,468,164

**Financials (2017-18 year):** revenue \$8.6 million (down 16%), earnings before interest, taxation, depreciation and amortization (Ebitda) loss \$2.637 million (previously \$4.22 million loss), net loss after tax \$4.95 million (previously \$17.65 million deficit)

**September quarter:** receipts \$2.3 million, cash burn \$682,000, cash \$1.83 million\*, estimated current quarter outflows (before inflows) \$3.2 million

\* ahead of \$3 million capital raising in late November

**Chief executive officer:** Mike Jackman

**Board:** Damien Lim (chairman), Dr Eliot Siegel, David Chambers, Wayne Spittle.

**Identifiable major shareholders:** Oceania Capital Partners 8.6%, BV Healthcare II Pte Ltd 8.6%, JM Financial Group 7.6%, Ravi Krishnan 4.37%.

While the Australian government has a little more persuasive work to do with its My Health Records scheme, there's little doubt that digital health records in a central repository will become the norm globally.

That's especially the case in the US, where mandatory electronic records was a key - and surviving - pillar of Obama's Affordable Care Act.

Based at Burlington in Virginia, Mach7 is surfing the trend with its cloud-based enterprise software for hospitals and clinics that aggregates an individual's medical records so that they are readily available for healthcare professionals.

It also provides diagnostic and imaging tools to all the "ologists"; radiologists, oncologists, cardiologists, pathologists, ophthalmologists, etcetera.

Mach7 provides picture archive communications system, or PACS, which is the diagnostic tool used by clinicians. But it also provides vendor neutral archives, or VNAs. As their name suggests VNAs allow any provider's imaging tools to be integrated on the platform.

"Our system is designed to take everything from images to videos to documents and to consolidate them on the one platform," says CEO Mike Jackman. "That makes it easier to manage and access the data on phones, devices or web browsers."

The system is designed to integrate the harder stuff, such as images or data from non-compatible devices or legacy applications, on the one platform.

In the US, the company says, 25 percent of patients complain their results or records from one provider were not available for another in a timely manner. In three out of 10 cases the records couldn't be found at all.

More worryingly, 80 percent of all serious medical errors happen because of miscommunication as patient care is transferred from one provider to another.

We know: it's easy to mishear right leg for left ear.

## **Going global**

While the company is focused on the US market, it has clients in the UK, Qatar, China and South East Asia. Clients include Penn Medicine, Massachusetts General Hospital, University of Virginia Health System, Broward Health (a top 10 hospital owner), Maine Health (a state-wide healthcare provider) and Hamad Medical Corp (Qatar's leading hospital system).

The company recently won its biggest contract, with the Hospital Authority of Hong Kong, which manages 43 public hospitals. Worth \$15 million over five years, the deal was won from a "Melbourne Cup" field of contenders.

"They take their time and do tremendous due diligence," Mr Jackman said. "It was an amazing process and we were proud to be chosen."

In November, Virginia-based not-for-profit hospital group Sentara awarded Mach7 an expanded contract to modernize five separate PACs.

In all, Mach7 claims 59 blue chip clients.

## **History**

Mach7 was founded in 2007, by image workflow expert Ravi Krishnan, who has held roles at GE Healthcare and Agfa Healthcare (Mr Krishnan remains Mach7's chief strategy officer).

Mach7 launched its first product in 2012. In March 2016 the company merged with the ASX-listed diagnosis house 3D Medical - a reseller of Mach7's products - in a share deal.

3D Medical was formerly known as Safety Medical, but in 2012 dropped its safety syringe business to go gold mining in Brazil, which didn't pan out, and in 2014 said it would acquire 3D Medical for a backdoor listing to pioneer three-dimensional printing and holographic projection technology, completing the deal and name change to 3D Medical in early 2015.

In June 2015, 3D said it had developed a 3D-printable titanium joint for jaw surgery, which had been implanted in a Melbourne patient, but then "merged" with Mach 7 to raise \$10 million for imaging and changed its name to Mach7.

A turnaround guy, Mick Jackman clocked on as CEO in September last year, having held roles as CEO for the Americas at GE Healthcare and as head of Carestream Health (formerly Kodak Health).

Mr Jackman said while 3D printing was a good idea, management saw broader prospects in enterprise imaging platforms.

“The first thing I did as CEO was clean it all up,” he said. “All the profits were from the Mach7 side anyway.”

Board member David Chambers was former CEO of Pro Medicus (more on them later) and Visage Imaging. Chief financial officer Jenni Pilcher was Australian CEO at 3D Medical and has also been chief numbers woman at Mesoblast and Alchemia.

### **Shifting strategy**

Mach7 has undergone a strategy shift from catering for large academic and hospital groups and imaging centres, to local and regional hospitals (such as El Camino in Mountain View, California).

“We will continue to target this segment of the US market as facilities of this size tend to have a more streamlined purchasing and decision-making process which shortens the buying cycle,” Mr Jackman says.

Mach7 has also evolved to supplying the PAC systems (the diagnostic applications) rather than just the vendor neutral archives. The enterprise imaging market is worth about \$US2 billion today and is forecast to double to \$US4 billion by 2024.

### **Compare and contrast**

Mach7’s global rivals include the rebirthed film companies Carestream (Kodak), Agfa, Fujifilm and medical equipment suppliers such as GE Healthcare, Siemens and Philips.

The Adelaide-based, Alcidion (market cap \$35 millions) offers Miya (pronounced Myer), a platform to consolidate data from multiple repositories and apply the ‘smarts’ to that data through artificial intelligence and algorithms.

In effect, Miya alerts doctors to the information they really need to know.

Alcidion this year acquired the private MKM Health, which also plays in the health informatics sector, for \$12 million.

Then there’s the enterprise imaging and radiology information systems house Pro Medicus, which has also focused on the US with its home-grown technology.

Last year, Pro Medicus made a \$12.74 million profit on revenue of \$35 million. Its market capitalization? More than \$1 billion. While Pro Medicus has more of a focus on the imaging (PACS) side, it competes with Mach7 in several sectors.

## Financials and performance

Harsh readers of the 2017-'18 results might conclude that Mach7 is going backwards at, well, a Mach 7 pace, given revenue slipped 16 percent to \$8.6 million. Closer examination shows turnover for the US gained 13 percent to \$7.64million - the lion's share of total revenue of \$8.64 million.

The average was brought down by the Middle Eastern contribution falling 75 percent to \$661,299, the result of a "particularly large" contract in the previous year.

That's ok, then.

The US revenue mainly derived from management services - helping clients migrate their patient management system - than software sales itself.

The company prides itself on not capitalizing software development costs, or any other expenditure for that matter. As a result, it's taking longer to reach break-even profitability.

"However it also means that future profits will be maximized and will not be impacted by costs that have been incurred in previous years," Mr Jackman says.

The company claims contracted and recurring revenue of \$5.3 million and a pipeline of more than \$100 million. The recurring revenue has grown at a compound annual 24 percent over the last five years.

Mach7's reported loss of \$4.9 million compares with deficits of \$17.6 million in 2016-'17, \$12.62 million in 2015-'16, \$6.9 million in 2014-'15 and \$302,000 in 2013-'14.

Mach7 had only \$1.8 million in the kitty at the end of the September quarter, but in late November raised \$3 million in a private placement at 20 cents a share (an 11 percent discount). The raising attracted several new investors including Australian Ethical, thus bringing a halo of goodness to the register.

### **Dr Boreham's diagnosis:**

Mach7 is in a sweet spot, considering the \$100 million-plus of revenue that's almost guaranteed to come through the door.

Given the large licks of development costs have been expensed, we expect modest profitability to occur sooner rather than later. The sterner interpretation is that Mach7 has no excuse to keep posting steep losses year after year.

Management expects revenue to flow in the next 12 to 24 months from distribution deals in the Latin America, Europe and Britain.

***Disclosure: Dr Boreham is not a qualified medical practitioner and does not possess a doctorate of any sort. He has never had an x-ray, magnetic resonance imaging or positron emission tomography, but spends much of his time scanning the horizon for blue sky.***

## PHYLOGICA

Phylogica says that a vaccine using its peptides has shown efficacy for herpes simplex virus-1 in mice.

Phylogica said that on day-0, 12 mice were treated with its “cell penetrating peptides”, formerly known as Phylomers, with an antigen and adjuvant; 12 were treated with the antigen and adjuvant with the HIV-based transactivator of transcription or Tat; nine were treated with antigen and adjuvant; nine with adjuvant alone; and nine had no treatment. The company said that the mice were then inoculated with herpes simplex virus-1 (HSV-1) on day-7, and culled on day-13, with tissue samples taken for the measurement of viral burden.

Phylogica said that nine of 12 mice treated with its peptide were HSV-1 free, compared to six of 12 in the Tat group, three of nine in the adjuvant with antigen group, two of nine in the adjuvant alone group and one of nine in the vehicle control group.

The company said it was “developing a peptide vaccine ... to harness the power of the immune system to fight a disease process”.

Phylogica said that its cell-penetrating peptides “deliver antigens that are unique to diseased tissues, viruses or cancer, to the body’s immune system in order to provoke an amplified immune response against the diseased tissue”.

The company said the peptides played “a critical role in delivering these antigens inside immune cells to trigger a killer T-cell response ... programmed specifically towards the antigen ... that is, targeted to the diseased cells”.

Phylogica said its peptides delivers the virus antigen into dendritic cells, which triggered an immune response, through the production of T-cells, directed specifically towards the antigen expressed on the virus which was the same antigen that the peptide delivered to the dendritic cell.

The company said that the more effective the peptide was in delivering the antigen to the inside of the dendritic cell, the greater the magnitude of immune response through production of a cytotoxic CD8+ T-cell, which found and killed the virus.

Phylogica said it was planning a further animal study to compare its peptide with the Geneva, Switzerland-based Amal Therapeutics ‘zebra’ peptide, with results expected by April 2019.

The company said that Amal recently raised about \$50 million to take its peptide vaccine into the clinical for colorectal cancer.

Phylogica fell one cent or 3.2 percent to three cents with 2.8 million shares traded.

## PARADIGM BIOPHARMACEUTICALS

Paradigm says data on a further 38 osteoarthritis patients treated with its injectable pentosan polysulfate sodium have further reduced average pain scores.

Paradigm said the patients, treated under the Australian Therapeutic Goods Administration special access scheme, supported the continued reduction in average knee pain with the total average reduction for the total of 183 patients down 51.4 percent. In November, the company released data showing pain reduction of 50.3 percent in the first 75 patients, 52.9 percent in 100 patients, 51.5 percent in 125 patients and 51.2 percent in 145 patients (BD: Nov 7, 2018).

The company said that the patients were treated under a similar dosing regimen as its 110-patient phase IIb randomized, double-blind, placebo-controlled, clinical trial of injectable pentosan polysulfate sodium for osteoarthritis.

Paradigm said the clinical trial results were expected on or before December 21, 2018.

Paradigm was up 19 cents or 15.1 percent to \$1.45 with 888,448 shares traded.

## GENETIC SIGNATURES

Genetic Signatures says it has received \$2,574,928 from the Australian Tax Office under the Federal Government Research and Development Tax Incentive program. Genetic Signatures said that the Tax Incentive related to expenditure in the year to June 30, 2018, as well as an adjustment in favor of the company for the previous year. Genetic Signatures was up half a cent or 0.7 percent to 74.5 cents.

## ORTHOCELL

Orthocell has requested a trading halt pending the release of “an announcement regarding a capital raising”.

Trading will resume on December 11, 2018 or on an earlier announcement.

Orthocell last traded at 18.5 cents.

## OSPREY MEDICAL

Brandon Capital says it has increased its holding in Osprey from 91,413,524 shares (26.9%) to 116,263,524 shares (26.9%).

The substantial shareholder notice said the shares were acquired in the recent \$14.3 million placement and rights issue at 15.5 cents a share (BD: Oct 30, Nov 29, 2018).

Osprey was unchanged at 13 cents.

## AVITA MEDICAL

Adam Gregory Leitzes and Karst Peak Capital say they have increased but been diluted in Avita from 265,226,056 shares (19.76%) to 285,895,857 (17.30%).

In a substantial shareholder notice the Hong-Kong-based Mr Leitzes said he bought 20,669,801 shares in this week’s placement which raised \$40 million at eight cents a share (BD: Dec 4, 2018).

The notice said the associated companies were Karst Peak Asia Master Fund and Vermilion Peak Master Fund.

Avita was unchanged at 7.8 cents with 1.45 million shares traded.

## GENETIC SIGNATURES

Deutsche Bank AG says it has ceased to be a substantial shareholder in Genetic Signatures returning all 14,893,618 shares or 14.32 percent.

Yesterday, Deutsche Bank AG has become substantial in Genetic Signatures WITH 14,893,618 shares (BD: Dec 6, 2018).

The London and Hong Kong based Deutsche Bank AG London said the shares were held as a “Prime broker that has exercised its re-hypothecation right in respect of shares pursuant to a prime brokerage agreement” and paid nothing for the shares, which it acquired “under a prime brokerage agreement with Karst Peak Select Master Fund”.

Biotech Daily will cease coverage of Karst Peak and Deutsche Bank, unless they buy or sell shares, rather than merely borrow, lend and transfer them.