



# Biotech Daily

Tuesday March 6, 2018

*Daily news on ASX-listed biotechnology companies*

- \* **ASX UP, BIOTECH DOWN: IMMUTEP UP 9%; LBT DOWN 17.5%**
- \* **LBT PLACEMENT RAISES \$7m, SHARE PLAN FOR \$1m MORE**
- \* **NOMINATIONS CLOSE FOR \$750k SCIENCE PRIZES MARCH 26**
- \* **ZELDA, CURTIN TRIAL MARIJUANA-CHEMO FOR PANCREATIC CANCER IN MICE**
- \* **INVICTUS LICENCES MONASH PRO-DRUG DELIVERY PLATFORM**
- \* **BARD1: '89% SENSITIVITY, 82% SPECIFICITY FOR OVARIAN CANCER'; UP 130%**
- \* **MICRO-X SELLS \$1.8m OF NANO X-RAY UNITS AND SPARE PARTS**
- \* **GENETIC TECHNOLOGIES, OMX DEAL FOR SHIVOM GENETIC DATABASE**
- \* **CANN GRANTED AUSTRALIA, CANADA MARIJUANA PERMITS**
- \* **USCOM BP+ IN US ELECTRONIC HEALTH STUDY**
- \* **US PATENT FOR IMMUTEP IMP701 HUMANIZED ANTIBODY**
- \* **NOXOPHARM: '12 OF 14 NOX66 PATIENTS RESPONSE'**
- \* **BVF PARTNERS, MARK LAMPERT SELL 10m VIRALYTICS SHARES TO 4%**
- \* **AUSBIL TAKES 8% OF BIONOMICS**
- \* **PAUL, ELEANOR STEPHENS TAKE 5.5% OF RHINOMED**
- \* **ATCOR LOSES 13-YEAR CFO CO SEC PETER MANLEY**

## MARKET REPORT

The Australian stock market recovered 1.14 percent on Tuesday March 6, 2018 with the ASX200 up 67.4 points to 5,962.4 points. Twelve of the Biotech Daily Top 40 stocks were up, 16 fell, nine traded unchanged and three were untraded. All three Big Caps rose.

Immutep was the best, up 0.2 cents or 8.7 percent to 2.5 cents with 10.5 million shares traded. Bionomics climbed 5.9 percent; Actinogen and Opthea improved four percent or more; Cochlear, Dimerix and Oncosil were up more than three percent; Clinuvel and Impedimed rose more than two percent; CSL, Nanosonics, Pro Medicus and Resmed were up more than one percent; with Neuren and Sirtex up by less than one percent.

LBT led the falls, down 3.5 cents or 17.5 percent to 16.5 cents with 1.5 million shares traded. Reva fell 7.7 percent; Mesoblast lost 6.7 percent; Telix was down 4.6 percent; Acrux, Pharmaxis and Uscom were down more than three percent; Factor Therapeutics, Optiscan and Starpharma shed more than two percent; with Admedus, Ellex, Orthocell and Polynovo down one percent or more.

## LBT INNOVATION

LBT says it has raised \$7 million through an oversubscribed placement at 15 cents a share and hopes to raise a further \$1 million through a share plan.

LBT said it was negotiating with a strategic investor to subscribe for up to an additional \$400,000 under the second tranche of the placement.

The company said the funds would support the commercial launch and development of its automated plate assessment system (APAS) technology and product extensions, working capital and costs associated with the placement.

LBT said the placement would be in two tranches, with \$3.8 million to be issued under the remainder of the company's 25 percent placement capacity and \$3.2 million in a second tranche subject to shareholder approval.

The company said the placement price of 15 cents was a 16.6 percent discount to the 5-day volume weighted average price.

LBT said the record date for the share plan would be March 2, 2018, with further details to be announced.

The company said that the Sydney-based Hawkesbury Partners and the Melbourne-based PAC partners were joint lead managers for the placement.

LBT fell 3.5 cents or 17.5 percent to 16.5 cents with 1.5 million shares traded.

## OFFICE OF THE CHIEF SCIENTIST

Australia's chief scientist Dr Alan Finkel says the deadline for nominations for the \$750,000 in Prime Minister's Prizes for Science is Wednesday March 26, 2018.

In a media release Dr Finkel said "the prestigious prizes celebrate the achievements of Australian scientists, teachers and innovators across the country".

The Prime Minister prizes for science and prize for innovation each carry awards of \$250,000, with \$50,000 each for the Malcolm McIntosh prize for physical scientist, the Frank Fenner Prize for life scientist, the prize for new innovators and the excellence in science teaching in primary and secondary schools prizes.

Nominations close at 5pm on March 26, 2018 and for further details about the prizes or to nominate, go to: [www.business.gov.au/scienceprizes](http://www.business.gov.au/scienceprizes).

## ZELDA THERAPEUTICS

Zelda says it will begin a combination marijuana extract and chemotherapy trial for pancreatic cancer in mice with Western Australia's Curtin University.

Zelda said the expansion of the Curtin University collaboration would investigate the effect of its cannabis formulations in combination with the chemotherapy agents paclitaxel (Abraxane) and gemcitabine.

The company said that the treatment protocols would "mirror typical standard of care protocols [used] by oncologists treating patients with pancreatic cancer".

In 2016, Zelda announced the collaboration with Curtin University, to test its medical marijuana formulations and protocols against in-vitro pancreatic cancer models (BD: Dec 20, 2016).

The company said there was "a growing body of evidence that whole plant cannabinoid extracts can impede cancer growth and potentially render the tumor more responsive to chemotherapeutic agents".

Zelda executive chairman Harry Karelis told Biotech Daily he expected results from the trial by the end of this year.

Zelda was up half a cent or 3.85 percent to 13.5 cents with 1.8 million shares traded.

## INVICTUS BIOTECHNOLOGY MONASH INSTITUTE OF PHARMACEUTICAL SCIENCES

Invictus says it has licenced the rights to a drug delivery technology platform for tocotrienol pro-drugs developed by the Monash Institute of Pharmaceutical Sciences. Invictus said it would not disclose the commercial terms of the “exclusive global” licence agreement at the present time.

The company said it was commercializing evidence-based food additives and pharmaceuticals based on natural tocotrienols and the Monash pro-drug platform was “expected to deliver tocotrienols more effectively from the gut to target tissues and organs, without first passing through the liver”.

Invictus said the pro-drug delivery system had “the potential to improve bioavailability, which could in turn, improve the utility of tocotrienols in a range of indications such as hyperlipidaemia, cancer and cardiac fibrosis”.

The company said that the pro-drug platform was developed by Prof Chris Porter’s research group at the Monash Institute of Pharmaceutical Sciences.

Invictus executive chairman Dr Glenn Tong said the licence had “the potential to add considerable value to our prescription medicines development program”.

Invictus said that with its research partners it would assess the bioavailability and efficacy of these new analogues in animal models and prepare for first-in-human clinical studies within the next 18 to 24 months.

The company said it had licenced to patents from Monash, both titled ‘Lymph Directing Prodrugs’ providing coverage until 2034 and 2035 respectively.

Invictus said that the term of the licence was for the life of the patents which were for the field defined as “lymph directing pro-drugs of tocotrienol compounds being vitamin E and vitamin E derivatives”.

Invictus is a private company.

## BARD1 LIFE SCIENCES

Bard1 says its cancer diagnostic has shown 89 percent sensitivity (accurate positives) and 82 percent specificity (accurate negatives) in detecting ovarian cancer.

Bard1 said results from its OC-400V study compared favorably to previous results from its OC-400 study, which returned 82 percent sensitivity and 79 percent specificity in cross-validation test sets.

The company said that the OC-400 study compared 200 cancer samples with 200 normal samples and the OC-400V study compared 82 cancer samples with 27 normal samples.

Bard1 executive director and chief scientific officer Dr Irmgard Irminger-Finger said the study provided “further evidence of the robustness of the Bard1-Ovarian test”.

“Upon transfer to a commercial platform, our ongoing product development efforts will focus on testing Bard1-Ovarian in larger sample sets and the addition of other immunogenic markers to our biomarker panel to further train the algorithm and increase its accuracy for early detection of ovarian cancer,” Dr Irmgard Irminger-Finger said.

The company said it was in discussions with a number of contract laboratories to transfer the Bard1 research assay to a commercial platform to enable the test to be performed by most hospitals and clinical laboratories.

Bard1 chief executive officer Dr Learne Hinch said that the “transfer of our research assay to a commercial platform will enable more efficient development and commercialization of our diagnostic pipeline for detection of lung, ovarian and other cancers”.

Bard1 was up 1.3 cents or 130.0 percent to 2.3 cents with 816.5 million shares traded.

## MICRO-X

Micro-X says it has received a purchase order for \$1.8 million worth of its DRX Revolution Nano carbon nano-tube powered x-ray units and spare parts.

Micro-X said the Nano units would support its distribution partner Carestream Health's sales and marketing activities and provide initial stock for first customer sales.

Micro-X managing-director Peter Rowland said the sale was a "historic moment in Micro-X's evolution".

Micro-X was up 2.5 cents or 6.4 percent to 41.5 cents.

## GENETIC TECHNOLOGIES

Genetic Technologies says it has an agreement with Omix Ventures Private which operates Project Shivom to build "the world's largest sequenced genetic database". Genetic Technologies said the non-binding term-sheet with the Munich-based Omix intended to provide a framework for it to become a collaborative laboratory as part of a network of laboratories for Project Shivom and improve its development of predictive cancer tests through access to a large population of data and new markets.

The company said the collaboration could be the basis of a new data monitoring and risk assessment service, allowing the modification of its risk assessment kits for additional ethnicities as well as the potential to develop new products based on opportunity and areas of need.

Genetic Technologies said Project Shivom would have access to its accredited laboratory. The company said that the relationship could result in increased numbers of samples processed, improve its database and generate increased revenues on a pay per use basis, as well as provide an opportunity to offer genetic counselling.

Genetic Technologies the company said that Project Shivom was establishing "a precision medicine ecosystem, a decentralised blockchain where people can get their genome sequenced and stored".

The company said that Project Shivom planned to collect genomic data to build a platform to provide ancestry data, personal health and genomic data for research and was seeking to collaborate with partner organisations across multiple industries to establish a fully integrated, open, shareable, scalable ecosystem.

Genetic Technologies' executive chairman Dr Paul Kasian said the company was "excited about the opportunity to collaborate with Project Shivom on its unique blockchain platform" and the collaboration would enable it "to offer a comprehensive risk assessment portfolio".

Genetic Technologies was up 0.3 cents or 30.0 percent to 1.3 cents with 60.5 million shares traded.

## CANN GROUP

Cann says it has both Australian and Canadian approval to import genetics, or plant material, and cannabis oils for its marijuana plant breeding program.

Cann said the approvals by Health Canada and the Australian Therapeutic Goods Administration would allow it to establish a bank of various genetics, to facilitate research into the suitability of each genetic strain for therapeutic applications.

The company said the import permits for cannabis oil would allow it to bring four products developed by its Canadian partner Aurora Cannabis to Australia.

Chief executive officer Peter Crock said the with the genetics Cann would "broaden [its] genetic base and improve [its] ability to cultivate various strains of medical cannabis".

Cann fell five cents or 1.7 percent to \$2.95 with 494,634 shares traded.

## USCOM

Uscom says it has sold an unquantified number of its BP+ central blood pressure monitors to an unnamed US company for a heart failure study.

Uscom said that the BP+ central blood pressure system would be used as the blood pressure sensors for an on-going research program at the University of Pennsylvania supervised by Prof Julio Chirinos.

The company said the study was designed to define the benefits of electronic health monitoring and internet-guided medical care for heart failure patients following hospital discharge.

Uscom said that the study involved installing medical sensors including its BP+ into the homes of patients with heart failure and transmitting the data from these devices to medical experts, allowing for delivery of diagnostic and therapeutic guidance “without requiring expensive on-going patient hospital visits”.

The company said that the US electronic health market was estimated to be worth \$US3.8 billion in 2018.

Uscom executive chairman Prof Rob Phillips said his company had “high fidelity non-invasive digital cardiac, vascular and pulmonary monitors to generate the data which interfaces with ... [electronic] health software platforms”.

“Uscom also markets the proprietary mobile phone [applications] which couple with our server or [internet] cloud-based archiving, analysis diagnostic and reporting software,” Prof Phillips said.

Uscom fell one cent or 3.7 percent to 26 cents.

## IMMUTEP

Immutep says it has been granted a US patent relating to its LAG525 humanized form of its IMP701 antibody.

Immutep said the patent, titled ‘Antibody molecules to LAG-3 and uses thereof’ was co-owned by Novartis AG and Immutep SAS and would expire on March 13, 2035.

The company said the IMP701 antibody worked by activating T-cells and inhibiting regulatory T-cell function that would normally prevent T-cells from responding to antigen stimulation, removing two brakes that prevent immune response to cancer cells.

Immutep was up 0.2 cents or 8.7 percent to 2.5 cents with 10.5 million shares traded.

## NOXOPHARM

Noxopharm says 12 of 14 patients in its phase-Ib trial NOX66 cancer trial in Georgia, Eastern Europe, have shown stable disease or a partial response.

Noxopharm said the interim results from the chemotherapy enhancement program-1 (CEP-1) trial of NOX66, in combination with low-dose carboplatin, after three months of treatment showed 11 patients with stable disease and one with a partial response.

The company said that patients had breast, ovarian, lung or prostate cancer, with the last patient due to complete treatment in April, 2018.

Noxopharm said that two of the four lung cancer patients showed disease progression and that the partial response was from one of the three ovarian cancer patients.

The company said that of the initial 15 patients, one patient had toxicity serious enough to warrant withdrawal from the study “due to an allergic reaction to the carboplatin”.

Last year, Noxopharm said that 10 of 11 patients in its 19-patient phase Ia/Ib trial of NOX66 showed no disease progress after three months of treatment (BD: Nov 20, 2017).

Noxopharm fell 16 cents or 10.7 percent to \$1.335 with 764,531 shares traded.

## VIRALYTICS

The San Francisco, California-based BVF Partners and Mark Lampert say they have ceased their substantial holding in Viralytics.

BVF and Mr Lampert said they bought 494,378 shares on November 28 and 29, 2017 for \$303,737 or 61.4 cents a share and on March 2, 2018 sold 10,000,000 shares for \$16,500,000 or \$1.65 a share.

Last month, Merck Inc (Merck Sharp and Dohme) said it would acquire Viralytics for \$502 million or \$1.75 a share (BD: Feb 22, 2018).

In 2017, BVF said it held 20,007,902 Viralytics shares or 8.32 percent, implying the company continued to hold 10,502,280 shares or 3.77 percent (BD: Jun 13, 2017).

In 2015, BVF acquired 11,032,845 shares when Viralytics was trading around 60 to 65 cents and in 2014, BVF acquired 2,000,000 shares on-market for \$600,000 or 30 cents a share (BD: Nov 28, 2014; Jan 25, 2016)

Viralytics was unchanged at \$1.675 with 924,532 shares traded.

## BIONOMICS

Ausbil Investment Manager says it has increased its substantial shareholding in Bionomics from 33,737,603 shares (7.007%) to 39,115,389 shares (8.108%).

The substantial shareholder notice said that the Sydney-based Ausbil bought and sold shares between March 29, 2017 and March 1, 2018, with the single largest acquisition on June 29, 2017 of 3,435,646 shares for \$1,335,092 or 38.86 cents a share and the largest sale on the same day of 2,949,066 shares for \$1,146,007 or 38.86 cents a share.

Ausbil said it was an investment manager for a number of institutional investors which were generally superannuation funds.

Bionomics was up 2.5 cents or 5.9 percent to 45 cents with 1.8 million shares traded.

## RHINOMED

The San Francisco-based Paul and Eleanor Stephens say they have become substantial holders in Rhinomed with the acquisition of 6,396,338 shares (5.47%).

The substantial shareholder notice said that the Stephens acquired shares between July 6 2016 and March 2, 2018 for \$US818,660 (about \$A1 million).

Rhinomed fell one cent or 7.4 percent to 12.5 cents.

## ATCOR MEDICAL

Atcor says chief financial officer and company secretary Peter Manley will leave the company at the end of March.

Atcor said that Mr Manley had "provided 13 years of dedicated service ... including leading the company through its [initial public offer] in 2005".

The company said that its company secretarial responsibilities would be assumed immediately by Jarrod White of Traverse Accountants who will also become chief financial officer after a transition during the month.

Atcor chief executive officer Craig Cooper said the company thanked Mr Manley.

Atcor fell 0.1 cents or 3.45 percent to 2.8 cents.