



# Biotech Daily

Friday March 8, 2024

*Daily news on ASX-listed biotechnology companies*

- \* **ASX, BIOTECH UP: IMPEDIMED UP 14%; MESOBLAST DOWN 7%**
- \* **DR BOREHAM'S CRUCIBLE: NEUREN PHARMACEUTICALS**
- \* **CONTROL BIONICS WINS UK NEURONODE REGISTRATION**
- \* **IMRICOR: LAUSANNE UNI VISION-MR ATRIAL FLUTTER ABLATION TRIAL**
- \* **TRUSCREEN PLANS KENYA, INDONESIA TRIALS**
- \* **EXOPHARM TO RAISE \$6.5m, BUY TRYP FOR PSILOCYBIN**
- \* **ASX SUSPENDS ALLEGRA FOR REPORTS TILL MARCH 22**
- \* **ALGORAE EXPECTS 'A.I.' MARIJUANA DRUG PLATFORM BY OCTOBER**
- \* **ECHO IQ RECEIVES \$1.3m FEDERAL R&D TAX INCENTIVE**
- \* **RECCE TAKES \$11m ENDPOINTS RDTI LOAN**
- \* **EMYRIA PLEADS 'SCHULTZ, ABC' TO ASX 29% PRICE QUERY**
- \* **NEVILLE MITCHELL TO REPLACE FISHER & PAYKEL SCOTT ST JOHN**

## MARKET REPORT

The Australian stock market was up 1.07 percent on Friday March 8, 2024, with the ASX200 up 83.3 points to 7,847.0 points. Twenty-two of the Biotech Daily Top 40 stocks were up, 11 fell and seven traded unchanged. All three Big Caps were up.

Impedimed was the best, up 1.5 cents or 14.3 percent to 12 cents, with 4.8 million shares traded. Resonance rose 10.9 percent; Dimerix was up 9.1 percent; Proteomics improved 5.9 percent; 4D Medical, Alcidion, Opthea and Polynovo were up four percent or more; Actinogen, Atomo, Nanosonics and Telix were up more than three percent; Amplia, Immutep, Neuren, Nova Eye, Prescient and Pro Medicus rose two percent or more; Avita, Cochlear, CSL, Emvision and Paradigm were up more than one percent; with Clarity and Resmed up by less than one percent.

Mesoblast led the falls, down 2.5 cents or 7.35 percent to 31.5 cents, with 7.9 million shares traded. Medical Developments lost 6.5 percent; Next Science fell 4.05 percent; Starpharma and Universal Biosensors were down more than three percent; Curvebeam, Genetic Signatures and Percheron (Antisense) shed more than two percent; Orthocell was down 1.2 percent; with Clinuvel and SDI down by less than one percent.

## DR BOREHAM'S CRUCIBLE: NEUREN PHARMACEUTICALS

By **TIM BOREHAM**

**ASX Code:** NEU

**Share price:** \$19.95; **Shares on issue:** 127,345,676; **Market cap:** \$2.54 billion

**Chief executive officer:** Jon Pilcher

**Board:** Patrick Davies (chair), Mr Pilcher, Dr Trevor Scott, Dianne Angus, Dr Jenny Harry, Joe Basile

**Financials (year to December 31, 2023):** revenue \$231.9 million (previously \$14.5 million), net profit \$157.1 million (previously \$184,000), earnings per share \$1.2016 (previously 0.1 cents), cash balance \$228.1 million (previously \$40.2 million)

**December quarter 2023:** receipts \$10.11 million, net cash inflows \$4.776 million, cash on hand \$228.54 million, quarters of available funding: lots

**Major identifiable shareholders:** Milford Asset Management 5.08%, Cameron Richard Pty Ltd 3.3%, Stuart Andrew Pty Ltd 1.95%, Essex Castle 1.89%

A year since Neuren and its US partner Acadia Pharmaceuticals gained US Food and Drug Administration (FDA) approval for their rare genetic neuro-degenerative disease drug Daybue (trofinetide), the companies have been reaping the financial rewards in dramatic style.

Last week, Neuren reported a \$157 million profit for calendar 2023, compared with a \$183,000 surplus previously. Corporate accounts usually describe such increments as 'large', but the company calls it out as an 85,270 percent increase - to be precise.

The profit derives from milestone and royalty payments from Acadia, which is selling the drug in North America and has the rights to distribute elsewhere. Daybue treats the paediatric ailment Rett syndrome, for which there is no other treatment.

Given the company is also swimming in cash, one would think that management would be afforded a ticker-tape parade.

Instead, Neuren shares had their worst fall in 12 months, partly the result of a research report from activist New York short-seller Culper Research, alleging Daybue had been a "complete flop".

Neuren chief Jon Pilcher declined to comment on the report, which is aimed at Acadia and does not mention Neuren. But he couldn't resist describing the missive as having "zero credibility".

He adds: "there's an atmosphere of people looking for negatives rather than taking a great story at face value."

## **An overnight 20-year success story**

A rare story of an Australian company getting a drug to market, Neuren (and Acadia) worked on Daybue for more than two decades, at a cost of at least \$US250 million.

Trofinetide was invented 20 years ago at Auckland University, in a program spearheaded by eminent chemist Prof Margaret Brimble.

A Nasdaq-listed neurological diseases specialist, Acadia acquired the North American rights in August 2018 as well as the responsibility for a phase III trial and securing FDA approval.

In March 2023, the FDA approved Daybue (trofinetide) for the treatment of Rett syndrome in adults and children aged two or more. In April, Acadia started selling the drug.

Acadia assumed the global rights in mid-July 2023, triggering a \$US100 million upfront payment, as well as potential milestones of up to \$US427 million plus royalties.

Neuren's chief financial officer since 2003, Mr Pilcher succeeded Dr Richard Treagus who stepped down in 2020 after seven years in the top job.

## **About Daybue**

Affecting only girls - not the sort of affirmative action we want - Rett syndrome is caused by a genetic mutation that results in inadequate signalling between brain cells.

Rett syndrome is marked by problems including difficulties in talking, breathing, eating and sleeping. Often the girls appear to be normal until about 18 months, but then they stop meeting developmental milestones.

There are about 15,000 sufferers in Europe and 28,000 in China, and in the US there are approximately 5,000 diagnosed patients, out of an estimated 6,000 to 9,000 in toto.

Based on naturally-occurring molecules in the brain, Daybue reduces inflammation associated with excessive inflammatory cytokines and normalizes abnormally low levels of the insulin-like growth factor hormone 1 (IGF-1).

Because Daybue targets the underlying problems but does not fix them, patients need to continue taking the drug over their lives.

Acadia's FDA application was supported by the results from a 187-patient phase III trial, called Lavender.

Lavender replicated the results of an earlier phase II trial called Lilac and came up roses.

To date, 860 patients have been treated in the US.

Mr Pilcher says 80 percent of the patient population is covered by Medicaid or private reimbursement.

## **Finances and performance**

Given Acadia bears the cost of selling Daybue, Neuren's accounts are a simple case of the revenue from Acadia going straight to the bottom line.

Neuren reported revenue of \$232 million, 1,500 percent higher than previously, generating the \$157 million net profit after the taxman took a \$48.1 million cut.

The revenue consisted of \$27 million of royalties, \$59.4 million of sales milestone payments and a \$146 million upfront payment for the global rights.

The royalties reflected Acadia's fourth quarter Daybue revenue of \$US87.1 million, more than the top end of the guided \$US80 million to \$US85.7 million.

Neuren's cash balance ballooned to \$247 million, from \$43.2 million previously.

Did someone mention dividends? Mr Pilcher says there's no point paying them until the company pays more tax and accrues franking credits.

Neuren shares fell 14 percent in reaction to the Culper report, but they are now only eight percent lower.

The shares have tripled over the last year but are adrift of their record high of \$25.11 struck on December 28, 2023. They are a very long way from the three cents a share from 2009 to 2013 - or 60 cents if you include the 20-to-one consolidation in 2017.

## **A stunning Dayb-ut**

Meanwhile, Acadia reported full-year Daybue sales of \$US177 million and guided to calendar 2024 turnover of \$US370 to \$US420 million. This is despite January sales being softer than expected because of the holiday period, with most Rett clinics closed.

Neuren expects \$61 million to \$70 million in royalties this year.

Neuren should pocket a \$US50 million (\$A77 million) milestone when Acadia achieves \$US250 million of sales.

All up, Neuren stands to collect milestone payments of up to US\$350 million based on four sales thresholds, capping out at \$US1 billion in sales.

Neuren is also entitled to one-third of the value of a Rare Paediatric Disease Priority Review Voucher (PRV), awarded to by the FDA to Acadia when it approved Daybue.

These fungible vouchers are normally sold to other pharma companies seeking fast-track FDA review of a potentially lucrative drug.

With the vouchers changing hands for around \$US100 million, Neuren factors in a \$US33m benefit although Acadia appears in no hurry to sell the valuable paper.

## **The long and the short of discontinuances**

Thanks - or no thanks - to the Culper report, investor interest centred on what Acadia had to say about patient discontinuances.

Acadia reported an 80 percent 'real world' persistency rate after four months, a substantial increase from 66 percent for the tightly-controlled Lilac trial. The difference is partly explained by the ability to modify dosages in real-world use, according the level of patient discomfort. Seven months in, the persistency stands at 63 percent.

"Adoption of Daybue in the diagnosed Rett syndrome population has been faster than expected and caregivers and physicians have continued to report meaningful improvements in patients," Neuren says.

In short - excuse the pun - Culper claimed that Daybue discontinuances were much higher than Acadia said, because of adverse events such as diarrhoea and seizures and a high hospitalisation rate. Culper models a 72 percent discontinuation rate in 2025, abating to 46 percent after 2026. The report claims that while Acadia estimates Daybue sales at \$US650 to \$US880 million, sales will peak at only \$US316 million in 2024.

Culper disclosed a 'short' position in Acadia, but not Neuren. Short sellers 'borrow' stock from institutional holders for a fee, in the hope of purchasing the shares at a lower price and returning the stock to the 'long' owner.

## **Neuren supporters, unite**

As well as being dismissed by Acadia and Neuren, the report drew a crucial response from several brokers and fund managers.

In its own report, Phoenix Growth Fund (PGF) said: "Our findings support an estimated 35 to 25 percent discontinuance rate from October 2023 - a period [for which] Acadia has not disclosed sales numbers." As with Culper, PGF based its claims partly on analysis of Facebook posts from the Rett community.

"Whilst our study isn't scientific in nature, it offers a more comprehensive approach than choosing to report just the negative comments and being heavily subject to selection bias."

Broker Wilsons says the Culper report "misconstrues available data to over-extrapolate dramatic conclusions that simply are not rooted in fact." The firms concur that Daybue's adverse event profile is "not great" - but that is not news.

## **Phelan' good about the pipeline**

Acadia expects a European filing for Daybue for Rett syndrome in the first half of 2025, a Japanese filing this year and potential Canadian approval this year. Acadia also expects a European launch of Daybue in 2026.

But Neuren's greater fortunes could lie with a second compound to treat four other related severe genetic disorders with the exotic monikers of Phelan-McDermid, Angelman, Pitt Hopkins and Prader-Willi syndromes.

The compound, NNZ-2591, is thought to be more effective and less toxic than Daybue.

The company has 'orphan' indication for these diseases.

In December last year Neuren released the top-line results of a Phelan McDermid phase II children's trial, showing the drug results in a statistically significant improvement on several measures (based on caregivers' and clinicians' observations).

Pitt-Hopkins and Angelman trials are ongoing, with top-line result expected in the June 2024 and September 2024 quarters respectively.

Across the four diseases, the addressable market is five times bigger than the Rett catchment: 56,000 sufferers in the US, 71,000 in Europe and 205,000 in Asia.

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

Neuren's experience with Culper once again highlights the controversial practice of activist 'short' funds taking a negative view of a company out of self-interest.

Your columnist believes such research is not intrinsically illegitimate, as it can counter over-optimistic research from 'long' investors with a similar vested interest in making money from the share price.

But if the shorters' claims are a beat-up - as looks to be the case here - facts will prevail. The shares will rise and the shorters will fall - well - short of their objectives.

As Phoenix Growth Fund cheekily asserted, the Culper report was "refreshing" as it tested the fund's thesis about whether it should be long in Acadia - and the answer is "yes".

Meanwhile, Mr Pilcher says Neuren's key challenge is to realise its broader opportunities, notably around NNZ-2591. He's also on a tiring investor briefing circuit that would leave even the most sober polmie [tr: politician] supine on a Canberra street.

"We have never been in such a strong position and we have never had such good opportunities ahead of us," he says.

Wilson's brokers exclaims that Neuren has "oodles of cash to fund their [research and development] pipeline, strong phase II data likely supporting registrational trial progression in the near term and - even better - an asset that is going to keep on giving in NNZ-2591 with two more key clinical trial catalysts within the next nine months."

***Disclosure: Dr Boreham is not a qualified medical practitioner and does not possess a doctorate of any sort. He likes to think his musings do not "misconstrue available data to over-extrapolate dramatic conclusions that simply are not rooted in fact."***

## CONTROL BIONICS

Control Bionics says the UK Medicines and Healthcare Products Regulatory Agency has approved the sale of its Neuronode electro-myography device.

Control Bionics said Neuronode was a wearable electro-myography device that allowed individuals with “limited or no physical movement to control computers, communication devices, and other assistive technologies using subtle muscle signals”.

The company said the device offered a non-invasive option for patients with conditions including spinal cord injuries, amyotrophic lateral sclerosis, cerebral palsy and stroke.

Control Bionics said it had received Conformité Européenne (CE) mark registration to sell Neuronode in the European Union.

The company said that UK registration was “an important step... to further its strategy to sell Neuronode as an unbundled accessory”.

Control Bionics chief executive officer Jeremy Steele said the company was “in discussions with a number of parties in the UK and continental Europe about partnering with them for the sale of the Neuronode into the broader European market”.

“The European market is very supportive of providing innovative and impactful technology in the assistive technology space,” Mr Steele said.

“Last year, we announced our intention to expand our Neuronode only sales outside of our existing markets and this approval is an important part of this strategy,” Mr Steele said.

Control Bionics was up 0.2 cents or 4.0 percent to 5.2 cents.

## IMRICOR MEDICAL SYSTEMS

Imricor says Switzerland’s Lausanne University Hospital has approved its trial of the Vision-MR cardiac ablation catheter for atrial flutter ablation.

Earlier this year, Imricor said it had approval for an up-to 91-patient study of its cardiac ablation catheter and irrigation pump products at the Baltimore, Maryland’s Johns Hopkins Hospital (BD: Jan 21, 2024).

At that time, the company said the trial would study the safety and efficacy of atrial flutter ablation procedures using its Vision-MR cardiac ablation catheter and HAT500RF generator and irrigation pump, with analysis after 76 patients had a seven-day follow-up.

Today, Imricor said beginning the trial at Lausanne University Hospital was still subject to final approval from the Swiss regulatory authority Swissmedic.

The company said the trial would support US Food and Drug Administration approval of its products.

Imricor said Lausanne University Hospital was expected to join Johns Hopkins as the second trial site, with Amsterdam University Medical Center and the Cardiovascular Institute of South Paris expected to follow.

The company said Lausanne University Hospital had built an interventional cardiovascular magnetic resonance imaging (ICMR) lab specifically for procedures using its products, with installation of capital equipment expected to be completed within the next few weeks. Imricor said it expected to complete the trial by January 2025, subject to the participation of four clinical sites.

Imricor chief executive officer Steve Wedan said the company was “one step closer to getting our FDA trial started at the [Lausanne University Hospital]”.

“We expect enrolment of patients to commence shortly after Johns Hopkins begins their enrolment,” Mr Wedan said.

“Our clinical team’s plans for executing an efficient multi-centre study ... is on track, which means our FDA process and US launch are also on track,” Mr Wedan said.

Imricor was up 1.5 cents or 3.3 percent to 47.5 cents.

## TRUSCREEN GROUP

Truscreen says it is planning a 1,000-patient trial in Kenya and a 100-patient trial in Indonesia, which could lead to “wider market access in future years”.

Truscreen said Kenya had an addressable cervical cancer screening market of 17 million women, while Indonesia had a potential market of 95 million women.

The company said the trials of its non-invasive optical-electrical device, as opposed to conventional pap-smear, were being driven by “key opinion leaders in these countries” through private healthcare networks.

Truscreen chief executive officer Martin Dillon said it was important that the company continued “with a growing pipeline of new market access activities to further grow the distribution of Truscreen cervical cancer screening technology.”

“We expect Indonesia to be a key market for our technology in [Association of Southeast Asian Nations countries], following our success in Vietnam,” Mr Dillon said.

“Similarly, Kenya is an important African market following our success in Zimbabwe,” Mr Dillon said.

Truscreen was up 0.1 cents or 5.3 percent to 2.0 cents.

## EXOPHARM

Exopharm says it will raise up-to \$6.5 million at 2.0 cents a share, buy Tryp Therapeutics and its intra-venous psilocybin for scrip and become “Tryptamine Therapeutics”.

In 2018, Exopharm said it hoped to raise up to \$7 million in an initial public offer to list on the ASX and develop exosomes as regenerative medicines (BD: Nov 14, 2018).

Today, the company said the Kelowna, British Columbia-based Tryp Therapeutics’ lead programs were designed to address “neuro-psychiatric disorders through the therapeutic dosing of synthetic psilocybin and [intra-venous] infused psilocin in conjunction with psychotherapy”.

Exopharm said that psilocin was the active metabolite of psilocybin.

The company said the agreement included the issue of 348,652,358 shares to Tryp shareholders, a ratio of 3.616 Exopharm shares for each Tryp share, 120,000,000 shares to Tryp debenture holders and 169,500,000 shares to Tryp convertible note holders. The company said it would issue 290,639,561 options to Tryp option-holders exercisable at 2.7 cents each for three years from its reinstatement to the ASX; 124,510,568 unquoted options with exercise prices ranging from 3.125 cents to 21.25 cents, expiring between July 22, 2024 and five years from reinstatement

Exopharm said following the acquisition and name change it would re-comply with ASX Listing Rules chapters one and two, researching and developing medicine with “known safety profiles to diseases with no effective first-line treatments”.

The company said it would conduct a public offer to raise between \$6.0 million and \$6.5 million to fund Tryp’s lead programs, with Alto Capital Pty Ltd appointed lead manager.

Exopharm said, in addition to its public offer, Tryp had raised \$3,390,000 through the issue of up-to 3,390 convertible debt notes with a face value of \$1,000 each.

The company said that following the acquisition, Jason Carroll would replace Dr Ian Dixon as chief executive officer, with Tryp’s Jim O’Neill as chief financial officer and Jim Gilligan as chief scientific officer.

Exopharm said Peter Molloy and Chris Ntoumenopoulos, as well as Bordeaux Capital’s Gage Jull, were proposed as non-executive directors.

The company said the acquisition deal had a termination fee of \$C1,000,000 (\$A1,120,000).

Exopharm was in a suspension and last traded at 1.1 cents.



### ALLEGRA MEDICAL TECHNOLOGIES

Allegra says it has been suspended for violating ASX Listing Rule 17.5, due to a delay in lodging its half year report, and expects to resume trading March 22, 2024.

In February, Allegra requested a suspension following a trading halt “regarding the company’s financing arrangements” (BD: Feb 23, 2024).

Today, the company said that it had been suspended by the ASX on Friday, March 1, 2024 for failing to lodge its Appendix 4D and half year report.

Allegra said that the delay was due to “continued discussions with its lenders in relation to its funding requirements, which remain ongoing”.

The company said it expected its half year report audit review to be finalized following the completion of its funding arrangements, expected to take “up-to an additional two weeks”.

The company said the funding arrangements would allow it to sell the intellectual property related to its Sr-Ht-gahnite spinal cage device.

Last month, Allegra said it had withdrawn its US Food and Drug Administration application for its Sr-Ht-gahnite spinal cage due to limited capital and the expense of obtaining supporting data, and hoped to sell its related intellectual property (BD: Feb 6, 2024).

Allegra last traded at 2.9 cents.

### ALGORAE PHARMACEUTICALS (FORMERLY LIVING CELL TECHNOLOGIES)

Algorae says it expects its Algoraeos artificial intelligence (AI) platform for generating “fixed dose [marijuana] combination drug targets” to be completed by October 2024.

Last year, Algorae said with the University of New South Wales it was developing an “artificial intelligence” platform, dubbed ‘Algoraeos’, for predicting drug candidates and to enhance outcomes (BD: Oct 25, 2023).

At that time, the company said the platform “will have predictive capabilities over all pharmaceutical drugs and therapeutic molecules of interest, however, it will encompass an innate specialization in cannabinoid and cannabinoid combination drug targets”.

Today, the company said “fixed dose combination drugs” were medicines made up of “two or more active pharmaceutical ingredients combined in a single dosage form”, and that the platform was expected to expand its therapeutic pipeline and be used to licence combination drug targets to third parties.

Algorae was unchanged at one cent with 15.1 million shares traded.

### ECHO IQ

Echo IQ says it has received \$1,267,655 from the Australian Taxation Office under the Federal Government’s Research and Development Tax Incentive program.

Echo IQ said the incentive related to expenditure for the year to June 30, 2023.

Echo IQ was unchanged at 12 cents.

### RECCE PHARMACEUTICALS

Recce says it has an \$11,178,965 loan from Sydney’s Endpoints Capital, secured against its expected Federal Research and Development Tax Incentive.

Recce said the loan at 15 percent a year was an advance on its accrued and expected “R&D refunds and secured against R&D credits”.

Recce chief executive officer James Graham said the funding was “a testament to the strength of Recce’s scientific platform and the potential of our pipeline”.

Recce was up two cents or 4.55 percent to 46 cents.

## EMYRIA

Emyria 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 29.2 percent from a low of 4.8 cents on March 7 to a high of 6.2 cents, and noted a "significant increase" in the number of shares traded.

Emyria said that yesterday the "ABC" had run a "feature article and news story" that highlighted its "unique status as one of the few organizations in Australia approved by the [Australian] Therapeutic Goods Administration to use [3,4 methylene-dioxy-methamphetamine or MDMA] for therapeutic purposes".

The company did not specify whether the ABC was the American or Australian Broadcasting Corporation or whether the report was on television, radio or its website. Emyria said it believed the "attention garnered from the coverage contributed to the price and volume increase".

Emyria said it was progressing a non-binding memorandum of understanding with Reach Wellness to fund a study of up-to 50 qualified first responders using its MDMA-assisted therapy, but that it did not consider the discussions material.

Emyria was up half a cent or 7.9 percent to 6.8 cents with 1.7 million shares traded.

## FISHER & PAYKEL HEALTHCARE

Fisher & Paykel says director Neville Mitchell will replace its chair Scott St John following his retirement at its annual general meeting in August 2024.

Fisher & Paykel said Mr St John joined the board in 2015 and had been chair since August 2020.

The company said under Mr St John's leadership it had "supplied products that helped millions of patients during the pandemic, purchased land for a second New Zealand campus and expanded its manufacturing footprint in Mexico and China".

Fisher & Paykel said Mr Mitchell was appointed a director in November 2018, and that from 1995 to 2017 was Cochlear's chief financial officer and company secretary.

The company said that Mr Mitchell was currently a director of Sonic Healthcare and Sigma Healthcare, and previously was a director of Osprey Medical and Sirtex Medical.

The company said it would begin a search for a replacement director for Mr St John.

Fisher & Paykel was up 24 cents or 1.05 percent to \$23.19 with 362,035 shares traded.