



Biotech Daily

Friday May 10, 2024

Daily news on ASX-listed biotechnology companies

Dr Boreham's Crucible: Immuron

By **TIM BOREHAM**

ASX code: IMC; **Nasdaq code:** IMRN

Share price: 8.9 cents; **Shares on issue:** 227,998,346; **Market cap:** \$20.3 million

CEO: Steven Lydeamore

Board: Paul Brennan (chair), Dr Roger Aston, Daniel Pollock, Prof Ravi Savarirayan (Stephen Anastasiou resigned on May 3, 2024)

Financials (half year to December 2023): revenue \$2.355 million (up 304%), loss of \$2.068 million (previously a \$1.98 million deficit), net tangible assets 7.62 cents (down 17%), cash of \$15.2 million (down 18%).

Identifiable major shareholders: Bank of New York Mellon Group 35.2% (the only substantial shareholder; BNY Mellon holds the ADRs listed on Nasdaq). Immuron's management and board hold collectively 1.5%

Steve Lydeamore's advice to biotech peers seeking to do business with the US military is to be armed with a high knowledge readiness level (KRL) when it comes to interpreting acronyms such as ... KRL.

The head of traveller's diarrhoea fighter Immuron, Mr Lydeamore cautions the usual business partnership rules of civvy street may not be valid. When seeking grant funding, applicants need to follow the guidelines to the letter or else they will be confined to barracks.

Potential partners for the US Department of Defense's (DoD's) health programs also have to navigate an array of agencies.

For instance, the Armed Forces Research Institute of Medical Sciences (AFRIMS) is devoted to optimizing "soldier lethality" by preventing infectious diseases.

The Uniformed Services University (USU) seeks to ensure the "overall well-being of war fighters, as well as [enabling] dual benefit outcomes that will improve civilian health".

And don't confuse the Naval Medical Research Command (NMRC) with the US Army Medical Research and Development Command (USAMRDC), or civil war will erupt.

"Even when the acronym is right, sometimes they change their name," Mr Lydeamore says, noting the NMRC used to be the Naval Medical Research Centre.

We've got the enemy on the run - not the runs

How is this relevant to Immuron, which specialises in immunotherapies for gut-mediated diseases that result in diarrhoea?

The answer is that diarrhoea is number one of 57 infectious diseases that affect front-line soldiers. Around four-fifths of troops on deployment will suffer the trots and the casualties are likely to mount as antibiotic resistance increases.

Legend has it that Napoleon lost at Water-loo because half his troops came down with dysentery.

Dubbed by Mr Lydeamore as "travel insurance for your holiday" Immuron's lead product Travelan is a well-established prophylactic for travellers' diarrhoea having been sold over-the-counter (OTC) in Australia since 2004.

It is also sold in the US and in January was re-released in Canada.

Since July last year, Travelan has been sold on the online Amazon platform and will also be available through retail chain Walmart's online portal.

While the Australian Therapeutic Goods Administration has approved Travelan as an OTC complementary medicine, the US Food and Drug Administration has not, and it can only be marketed as a dietary supplement.

Studies to date have shown that Travelan binds to 180 pathogenic strains of bacteria.

Now, Immuron is in the throes of multiple clinical trials - one of them on the cusp of phase III - to prove the efficacy of Travelan against specific diarrhoea-inducing pathogens (see below).

Three of the trials are supported by the US, which wants its troops to hit the ground running ... not with the runs.

Let's run through a bit of history

Based at Blackburn North in eastern Melbourne, Immuron has a long history having been founded as Anadis in 1994.

The company listed on the ASX in 1999, when we were all waiting for the Y2K computer virus to end the world.

Spoiler alert: it didn't. And neither did the 'real' Covid virus two decades later.

In 2004, Anadis listed Travelan as an over-the-counter (OTC) product. The company adopted its current moniker in 2008 and listed on the Nasdaq in July 2017.

The company's technology has always been based on its bovine immunotherapy platform. Along the way, programs for the liver disease non-alcoholic steato-hepatitis (NASH), the bowel disorder colitis and Covid were canned.

The former head of the ASX-listed Anantara Lifesciences, Mr Lydeamore joined in June 2022, replacing Dr Jerry Kanellos.

In June last year, chair Dr Roger Aston relinquished the position and became a non-executive director.

The former head of Polynovo and fellow Immuron director, Paul Brennan, was anointed chair.

All the goodness of cow's milk

Travelan (active ingredient IMM-124E) is based on the natural immunity-boosting goodness of colostrum, the 'first milk' delivered by mummy cows to their calves immediately after birth.

Mr Lydeamore says while Immuron's know-how is well known, it is rarely used commercially.

The pregnant cow is given a vaccine to 13 different types of entero-toxigenic Escherichia coli (ETEC). In response, the beast produces polyclonal antibodies in the colostrum that target specific pathogens.

Half the colostrum is whisked away in a bucket, spray dried and turned into tablets.

Unlike other marketed colostrum, Immuron's has a high immunoglobulin count and hyper-immune factor produced by the vaccine.

Currently the colostrum is processed by Synlait in New Zealand, but the company is mulling moving production to Victoria.

On the cusp of phase III

Immuron has four clinical programs, three of them funded by the military.

On March 7, Immuron shares soared 80 percent after the company announced top-line results from a phase II study assessing the efficacy of Travelan in preventing enterotoxigenic *Escherichia coli* (ETEC).

The data will be used to support an FDA application for a phase III registration study.

In January last year, the US DoD awarded Immuron a \$US3.43 million (\$5.2 million) grant, to carry out the phase II trial.

The study was pitched at a daily dosing regimen most suited to deployed US troops visiting developing countries. In other words, taking the pill three times a day is not practicable when you are holed up in a rice paddy surrounded by enemy fire.

Sixty healthy volunteers were recruited and randomly assigned to receive a single oral daily dose of Travelan, or placebo. Dosing commenced prior to “challenge” with ETEC and continued for seven days thereafter.

But only 37 percent of the control group fell ill, despite the sick-inducing *Escherichia coli* dose. “You don’t need much *E coli* to get traveller’s diarrhoea and they were given a huge amount, so it was surprising so many weren’t sick,” Mr Lydeamore says.

This meant the study couldn’t support the primary endpoint of a statistically significant difference between the incidence of moderate to severe ETEC-attributed diarrhoea.

But in the treated group, the results showed 66.7 percent “protective efficacy” against severe diarrhoea. Also, 83 percent fewer treated subjects required early antibiotic treatment, while none required intravenous rehydration.

Why anyone would agree to be “challenged” with a pathogen likely to make them ill?

Mr Lydeamore says the participants were well-remunerated, but some were motivated by curiosity rather than money. Or they were simply masochists.

Other studies

Immuron’s second most advanced study - funded by the US Naval Medical Research Command (NMRC) – is a phase II trial for the campylobacter pathogen, being carried out at Johns Hopkins University in Baltimore, Maryland.

Top-line results from the 30-patient trial, known as Campetec, are due later this year.

In a giant ‘real world’ study to support the company’s FDA entreaties, the Uniformed Services University (USU) is carrying out a Travelan field trial. Around 554 US and UK soldiers assigned to high-risk regions have been drafted - er - recruited.

In conjunction with Monash University, a fourth trial is another colostrum-based therapeutic, IMM-529 for *Clostridioides difficile* (C-difficile).

An earlier trial in Israel failed to recruit and was discontinued, but the company is using the safety data to support a phase II study.

Finances and performance

Travelan sales were \$1.3 million in the third (March) quarter, 51 percent higher than the second quarter and 75 percent higher year-on-year. Australian sales were \$900,000, up 66 percent and 99 percent respectively while the US accounted for most of the remainder.

Immuron's December half-year loss was \$2.068 million compared with \$1.98 million previously, leaving December-end cash of \$15 million.

Phase III would likely require two trials of 600 patients each, costing \$5 million each.

"We will meet with the Department of Defense to look at non-dilutive funding, but regardless, the board decided to move forward with this program," Mr Lydeamore says.

On March 8 this year, Immuron shares peaked at a 12-month high of 14 cents, having doubled from the year's low of seven cents on the ETEC phase III news. The shares peaked at \$15 in late 2004.

Mr Lydeamore says the company is happy to remain Nasdaq-listed despite the additional cost, given the higher liquidity and as a platform for equity raising (the company last raised funds in 2020). Nasdaq-based holders account for 35 percent of the register, but with no dominant shareholder.

The real show-stopper

Travellers have the choice of three diarrhoea products: Travelan, and the loperamide-based Imodium and Gastrostop (the biggest seller). The latter two block the diarrhoea after the fact, rather than preventing it (while provide valuable breathing space for stricken travellers to get to a decent dunny).

Antibiotics are rarely prescribed for prevention because of antimicrobial resistance, but oral rehydration salts are often used for post-infection recovery.

Travelan doesn't kill the pathogens per se, but stops them from attaching to the gut wall and neutralises the toxins at source.

As a preventive, Travelan ideally it is taken two days before travel and with every meal while travelling.

A 30-tablet Travelan pack sells here for about \$35 and \$US35 on Amazon.

Dr Boreham's diagnosis

While Travelan is proven to be effective - 900,000 doses have been sold to date - the product has been more of a way of keeping the lights on, rather than a business in its own right.

"The problem is it hasn't been marketed appropriately and we have spent our energies on research and development," Mr Lydeamore says.

The company assesses the US diarrhoea market at \$US1 billion a year, with 60 million Americans visiting - or invading - high-risk regions annually.

Of these, around half will self-medicate and visit a chemist.

But the other half will consult a doctor, so without an approved product the company is missing out on what it estimates to be a \$US100 million opportunity (based on snaring 15 percent of this market).

Immuron is also mulling entering the Asian and European markets.

Given these expansion options and the US military's enthusiastic backing of the trials, Immuron finally looks to be going places after three decades of promises.

One could say the company is hot to trot.

Disclosure: Dr Boreham is not a qualified medical practitioner and does not possess a doctorate of any sort. Hopefully he has some runs on the board anyway.