



Biotech Daily

Friday September 28, 2018

Daily news on ASX-listed biotechnology companies

Dr Boreham's Crucible: Footy Finals Sports Special



By **TIM BOREHAM**

Acrux: ACR; share price 22 cents; market cap \$37 million

Cogstate: CGS; share price 57 cents; market cap \$68 million

Dorsavi: DVL; share price 8.5 cents; market cap \$14 million

Medibio: MEB; share price 6.1 cents; market cap \$13 million

Medical Developments: MVP; share price \$4.19; market cap \$274 million

OBJ: OBJ; share price 2.3 cents; market cap \$42 million

Paradigm Biopharma: PAR; share price 90.5 cents; market cap \$114 million

Regeneus: RGS; share price 19 cents; market cap \$40 million

Rhinomed: RNO; share price 28.5 cents; market cap \$34 million

Uscom: UCM; share price 15.5 cents; market cap \$21 million

Drugs and sport do not make for the most comfortable of bed fellows at times: just ask US cyclist Lance Armstrong, world champion shrieker and occasional tennis player Maria Sharapova or the entire Essendon Football Club, whose 'Whatever it Takes' motto took on a sinister meaning in 2013.

But in a more legitimate guise drugs (and medical devices) are an integral part of any professional sport, with the possible exception of darts and synchronized swimming.

Even then we can't be sure.

When it comes to servicing our fast running, high leaping and tough tackling athletes, the Australian biotech sector is there to serve. And with four Australian Football League and National Rugby League teams vying for the ultimate prize, this weekend, what better time celebrate its role?

In this collectible Grand Final Bio-Sports Special Edition, the Dr Boreham's Crucible examines the life science stocks that help (or should help) prepare the stars for the big day, as well as monitor their on-field performance and pick up the pieces (such as shot knees and dodgy hamstrings) afterwards.

As a Melbournian, your columnist is biased unapologetically to the oval-balled game with 18 players (and in the case of Collingwood, the umpires) on their side.

Go ABC!!*

*Anyone but Collingwood

Before the game

Acrux is more about generics these days but the company remains synonymous with Axiron, its roll-on testosterone product that commanded the gorilla's share of the US market before being eroded by generic alternatives and a regulatory crackdown.

Still, we wonder how many footballers will reach for their Rexona Sports on Saturday morning with the faint hope that the deodorant supply line has become mixed up with the testosterone supply.

In terms of delivering other (approved) drugs more effectively, **OBJ** could go all the way with a product called Bodyguard, a wearable patch that delivers non-drug pain relief directly to an injury.

Bodyguard results from OBJ's program to develop the world's first transdermal delivery system that improves the performance of products (such as cosmetics) delivered through the skin.

The key to OBJ's know-how is the use of physical science (magnetics) rather than chemistry to achieve this aim. In clinical programs, Bodyguard is touted as being more effective than orally delivered drugs.

All eyes on the KPIs

For frustrated footy fans and players alike, the Modern Game is all about measurement, whether it be the Telstra Tracker, the positioning 'heat map' or 'other key performance indicators' (KPIs).

For coaching staff, the ability to measure and analyze how players move their limbs is a useful tool in preventing injuries and ensuring they achieve their KPIs (known in the old days as 'kicking a bag' or 'getting leather poisoning').

Consisting of gyroscopes, accelerometers and magnetometers, **Dorsavi's** wearable wireless devices measure the way people twist and step.

The sports version, Viperform, is deployed by the Australian Football League (AFL, or Footy, as all Aussie kids call it), the National Rugby League (NRL), Cricket Australia and the Australian Institute of Sport, as well as major US competitions.

The most popular module, the Athletic Movement Index, allows sports administrators to benchmark players in terms of susceptibility to injury.

Adding to Dorsavi's local sporting cred, running hero Herb Elliott was chairman until he retired at last month's AGM.

While Aussie rules is sometimes known as 'aerial ping pong' (a term coined by novelist Frank Hardy for the rapid end-to-end ball movement), the maker of non-invasive cardiac and pulmonary devices can claim an even higher, albeit less rapid, calling.

You see, **Uscom's** BP+ device was used to measure the blood pressure of 90 British service men and women scaling the heights of Mount Everest. It's also been used on the International Space Station, which should make the central BP measurement of heaving athletes a cinch.

Uscom (as in ultrasonic cardiac output monitors) has forged a quiet but successful path in the global medical device sphere since listing in December 2003.

Wounded in action

You know you've made it in medical science when your company's product is regularly cited by name in broadcasts to millions of viewers.

That's the case with **Cogstate**, which has developed a more reliable concussion test than the traditional 'count my fingers' routine (we dare say that if the player is a valuable match winner, nine or eleven fingers would have been enough for them to take to the field again), or the now rather unreliable 'Do you know who the Prime Minister is?'.

These days, the duty of care to players is much more onerous and the lawyers are doing their best to enforce this: several players are suing their former clubs alleging the cumulative effects of concussion have left them with brain injuries.

The Cogstate test is a screen-based tool that can deliver a result within 15 minutes, with a claimed high reliability rate.

Not that Cogstate can rest on its laurels: a company called **Hitiq** is mulling an ASX listing, based on its concussion-detecting analytics that are embedded in a humble mouth guard.

Commentators are also prone to utter 'they've gone for the green whistle' when a hapless prone player is hoisted on a stretcher.

The Green Whistle is not a reference to the umpires' time-honored device to regulate play, but alludes to **Medical Developments'** lead analgesic product, Pentrox.

A reformulation of the methoxyflurane product used by ambulance services here since 1975, Pentrox is now sold in dozens of countries.

With more regulatory approvals pending, it's a green light for Medical Developments in its quest to replace opioid-based first-line pain relief. Sadly, for the injured player, the Green Whistle signals a red light and the rest of the match 'warming the pine' (bench).

The physical aftermath

Sport: so nourishing for the body and soul and the secret to a long and healthy life.

Er, not quite. When it comes to the rough and tumble footy codes, few players emerge unscathed without knee or joint issues or, in some cases, cognitive impairment.

But knees first: **Paradigm Pharmaceuticals'** anti-inflammatory lead compound pentosan polysulfate sodium (PPS) is yet to be approved, but that hasn't stopped dozens of AFL players using the drug under a special access scheme to treat dodgy knees and joints.

A reformulation of a deep vein thrombosis drug, PPS is known as safe. While the jury is out on its efficacy, past stars such as Greg 'Diesel' Williams and Andrew Walker swear by its restorative effects.

Dr Boreham's Crucible covered Paradigm in last week's column.

If PPS doesn't work, **Regeneus** is developing stem-cell and immunotherapies for disorders including osteoarthritis and musco-skeletal disorders.

A 20-patient phase I study for Progenza, the company's knee osteoarthritis treatment, identified a "rapid and sustained reduction in knee pain".

Regeneus has some way to go win the AFL's or NRL's seal of approval (and let's face it when you're not a betting company it's that little bit harder).

But Regeneus does have a tie-up with Japanese biopharma manufacturer AGC.

Meanwhile, **Neuren** plays in the cognitive impairment space. While the company's main targets currently are the neurological disorder Rett syndrome and Fragile X syndrome, in future Neuren could well provide relief for sportspeople who have had the odd knock or three to the noggin during their careers.

We don't use the term 'sportspeople' just to be politically correct, by the way. From footy to kickboxing, sisters are doing it for themselves and that means in terms of serious injury, they're increasing doing it to themselves.

The mental aftermath

Given the pressures placed on professional sportspeople to stay at the top of their game, mental health issues are rampant.

But at least they're being acknowledged, with AFL star Lance Franklin and US swimmer Michael Phelps exemplars of admired athletes who have acknowledged their struggles with the black dog.

Phelps is on the board of **Medibio**, which has developed an algorithmic application-based tool to screen, diagnose and monitor mental health.

To push its sporting credential further, Medibio's corporate health arm has a deal with the AFL to monitor the mental health of its employees.

The Minneapolis based Medibio recently delivered some depressing news of its own for investors: the abrupt departure of CEO Jack Cosentino.

Whatever the whys and wherefores of his exit, it wasn't an amicable one.

Dropped to the reserves

Like tendonitis-plagued Rafael Nadal during his US Open semi-finals, some biotechs have been forced to retire prematurely from the sporting arena.

The nasal device company **Rhinomed** started the great medical devices race with its Turbine device, a plastic clip like device that attaches to the nose.

Elegant in its simplicity, the idea of Turbine is that by forcing open the nostrils, more air is delivered to the lungs.

While Turbines remain on sale, Rhinomed's emphasis has since turned to a variant called Mute, to tackle the larger sleep apnoea market.

Rhinomed enjoyed the zealous advocacy of British cyclist Chris Froome, who was recently cleared of allegations his performance was enhanced by more than fresh air.

At last report Rhinomed was pursuing a tie-up with Columbia Care, the biggest medical dope operator in the US, to devise nasally delivered medical cannabis products.

Not quite performance enhancing, but no doubt one for the World Anti-Doping Agency's (WADA) list of banned substances.

And speaking of the drugs enforcer, one unfortunate nexus between biotechs and sport is the role of a peptide called AOD9604 in the Essendon (AFL) and Cronulla (NRL) doping scandals.

The failed anti-fat drug, AOD9604 (Anti Obesity Drug, geddit?) was developed by the listed **Metabolic** (whose 536-patient trial in 2007 showed conclusively that it did not work), which then morphed into **Calzada** and then **Polynovo**, which then off-loaded the Albatross Of Doping to its inventor and chief advocate in a fire sale.

The anti-doping authorities alleged AOD9604 was one of the substances allegedly taken by the allegedly unknowing players, although in the case of Essendon the players were allegedly pinged for taking other alleged substances, as well. Allegedly.

We're not quite sure about the progress or otherwise of AOD9604 in private hands, but at last report the substance remained popular with bodybuilders on the black market.

Good luck to 'em.

Meanwhile, there are 10 aforementioned Australian-listed biotechnology companies with a collective market cap of about \$650 million, eagerly watching every kick, handball, try and pirouette; not to mention every concussion, bone-break and anterior cruciate ligament tear.

Disclosure: Dr Boreham is not a qualified medical practitioner and does not possess a doctorate of any sort. His last sporting pursuit - high school ping pong - was remarkably injury free.