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Proteomics streaks ahead with simple test for injured racehorses

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Proteomics International is on track to deliver a world-first simple blood test in Australia this year to detect muscle damage in thoroughbred horses, which could revolutionise the way injuries are detected and monitored after a race.

The company's 66 per cent-owned subsidiary OxiDx Limited has developed the blood test technology alongside researchers at The University of Western Australia. It uses a drop of dried blood to test for two protein biomarkers, which can identify the level of muscle damage in horses.

Proteomics International Laboratories' innovative OxiDx muscle stress test could soon be used to monitor muscle damage in thoroughbred horses and elite athletes.

Proteomics aims to launch the first-in-class OxiDx test in Australia this year, and then plans to expand into the United States via the company's accredited Californian reference

laboratory.

The company also has a clinical study underway to validate OxiDx's ability to predict muscle damage in racehorses, which will further support its commercialisation efforts. Proteomics says the test will offer trainers a simple way to objectively measure a horse's muscle injury recovery, allowing them to tailor training and racing schedules to optimise the animal's post-race recovery and potentially enhance their subsequent performance.

'OxiDx has the potential to empower trainers to monitor muscle recovery with precision, helping their racehorses achieve peak performance while prioritising equine health and well-being.'

Proteomics International managing director Dr Richard Lipscombe

Over the weekend, the company published the results of a study of the novel test in the peer-reviewed journal, Veterinary Medicine and Science, which showed its OxiDx oxidative stress tests could monitor muscle recovery in racehorses.

Oxidative stress is caused by an overload of toxic oxidants - known as free radicals - which can overpower the body's natural defences, throwing the system off balance.

For the study, a group of Australian trainers collected dried blood samples from 34 horses before and up to seven days post-race, which were analysed by an external pathology centre for two key protein biomarkers.
Oxidative stress levels in most of the samples peaked 48 hours after a race and remained elevated for up to five days. Some horses showed longer recovery times of more than seven days.

Proteomics said the recovery rate variability highlighted by the study emphasised the importance of trainers monitoring each horse's recovery to prevent them from restarting training or racing prematurely.

Allowing horses to train or race with persistent muscle damage may cause poorer performance, an increased risk of major muscle strains or tears, and ultimately prevent animals from competing.

Proteomics is targeting both high-performance human athletes and the racehorse industry for its OxiDx test, given that oxidative stress is implicated in more than 70 conditions.

In sports, muscle injuries account for up to 55 per cent of all injuries in professional athletes. The horse racing industry fares even worse, with 85 per cent of thoroughbreds suffering at least one injury during a two or three-year racing season.
Proteomics International managing director Dr Richard Lipscombe said the latest results marked a significant milestone in applying the OxiDx test to equine veterinary medicine.

"OxiDx has the potential to empower trainers to monitor muscle recovery with precision, helping their racehorses achieve peak performance while prioritising equine health and well-being," he said.

Proteomics picked up a major win for the test earlier this year in the world's most populous market, after being granted a Chinese patent to use the potentially revolutionary muscle stress test on elite athletes.

The company said the Chinese patent, valid until 2039, would future-proof the company's competitive advantage in Asia.

In December, OxiDx released a proof-of-concept trial, tracking muscle damage and recovery in elite marathon runners with pinpoint accuracy.
OxiDx's global intellectual property footprint also covers the United States, Japan, Europe and Australia. Second-generation protections are still in the pipeline for key markets such as Singapore, India and a fresh round in the US.

The commercial potential of the OxiDx test appears enormous, particularly in performance-obsessed markets, where sports science, wellness and elite horse racing are booming.

And OxiDx is just one of several cutting-edge blood tests Proteomics has in the pipeline to target some of the world's most lucrative and urgent health care markets. It has simple, similarly protein-derived blood tests targeting the unmet areas of diabetes-related kidney disease, endometriosis and oesophageal cancer.

Proteomics has marked 2025 with a steady drip-feed of promising trials and regulatory results, which makes this disruptive biotech innovator one to watch.

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