

MEDIA RELEASE

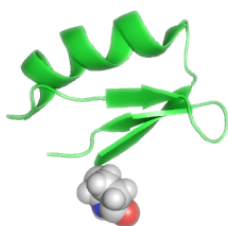
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Dramatically improved screening efficiency using predictive high-throughput peptide drug discovery



Using a radically new approach, Proteomics International has achieved a 67% efficiency in its drug discovery process. The proof of concept has been confirmed in the last few weeks with compelling results coming from the external verification of its data.



Traditional drug screening is about trying to find that needle in a haystack – that one in 10,000 hit. Pharma spend millions of dollars trawling for biomolecules from complex mixtures to find that one entity that is active in the specific bioassay. The process uses multiple rounds of screening, fractionating and purifying until the bioactive compound is isolated. It is hungry on material, costly, and plagued with false positives, yet only asks the question of that exact bioactivity. An acceptable hit rate for small molecule primary screens is 0.5-0.01%.

“We can offer a more efficient use of resources”, says Dr Richard Lipscombe, Proteomics International’s Managing Director. “The advances in biological technologies and computing power have opened new doors for the pharmaceutical industry. We have created a new generation of tools for drug discovery, and applied them to one of nature’s oldest chemical cocktails – venom.”

In the company’s proprietary process, *Bioven*, a venom is fully sequenced to produce a database of peptides. Each molecule is then analysed by computer to predict its function. For any chosen activity the best candidates are selected and synthesised. It requires venom from only one bite or sting, and the database can be easily rescreened any time, for any desired function. Due to their origins, these molecules have the added advantage of proven solubility and stability.

Working with peptides isolated from Australian arthropods, the team targeted two bioactivities to validate their process – pain relief and bactericidal. After promising early results from anti-bacterial screens the company selected a group of six molecules it predicted would be ion channel blockers, and four were significant positives when tested in an animal model. A 67% hit rate.

Dr Scott Bringans, Proteomics International’s Research Manager, said it was an incredible result. “We predicted analgesic and antibacterial peptides and found them at 100 times the industry normal success rate. But that is not the end of the story – we can go back to the library and pull out other classes - protease inhibitors, neurotoxins - the possibilities are vast. We have barely scratched the surface”.

Proteomics International has a secure source of new venoms under an agreement with the Northern Territory (Australia) government and the company collects scorpions, spiders and centipedes using a team of expert collectors based in Alice Springs. The company announced in April that its pre-screening process was recovering five times more potential drug candidates from one venom than expected from the literature. This reflects a mixture of increased sensitivity and novelty of techniques that are readily adaptable to other protein (or peptide) sources such as fish, molluscs, plants, and fungi.

The Company will be seeking expressions of interest from potential industry partners to take its *Bioven* discovery process to the next level.

About Proteomics International Pty Ltd

Proteomics International is both an ISO 17025 accredited contract service provider and research and development company, focused on providing quality analytical services to the biological research market and on developing value from protein drug discovery.

Proteomics International combines the most advanced high throughput mass spectrometry instrumentation (MALDI TOF-TOF and LC-MS/MS) and a team of qualified scientists with proven expertise in protein and peptide chemistry. The company has two focal research activities; analysis of venoms using its proprietary *Bioven* process, and the discovery and use of biomarkers from a variety of tissue sources. Skills developed from these research programs are incorporated into the sophisticated suite of specialist contract research techniques provided to clients such as iTRAQ, MRM, and *de novo* proteome mapping. High quality, fast and affordable protein identification, analytical and characterization services are routinely provided. Proteomics International is based in Perth, Western Australia and has established itself as an industry leader in the delivery of contract research and lead molecule discovery services in the Asia Pacific region. **Proteomics International is actively seeking distributors from many countries.**

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