Antithrombotic Peptides For HIT, VITT and VITT-like Disease

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Pharmaceuticals

Problem

Heparin-induced thrombocytopenia (HIT), vaccine-induced thrombotic thrombocytopenia (VITT), and VITT-like diseases are severe immune reactions that cause catastrophic blood clots. Approximately 3.5 million Australians receive heparin each year and nearly 8 thousand patients develop HIT. Without targeted intervention, 1 in 5 patients with HIT will die and 1 in 10 may require limb amputation. Current treatments (blood thinners) only manage symptoms and carry high risks, with no targeted therapy to disrupt the underlying immune reaction, leaving a critical gap in care for patients at risk of severe thrombosis and poor outcomes.

Solution

This technology disrupts the immune complexes which trigger HIT and VITT disease. It involves the administration of peptides that bind with components of the immune complex and neutralise pathogenic antibodies preventing them from causing harm. Unlike blood thinners, these peptides act directly on the disease mechanism without increasing bleeding risk. They work rapidly when administered intravenously, making them suitable for emergency intervention. In vitro studies show these peptides prevent the formation of immune complexes and reduce clot formation, offering a new, targeted approach to decrease the risk of life-threatening clots in patients affected by HIT and VITT.

Intellectual Property Status

An Australian provisional patent application was filed in 2025.

Potential Commercial Applications

— Emergency treatment in hospitals and clinics.

— Diagnostic tool for detecting pathogenic HIT and VITT antibodies

— Research reagent for studying immune reactions causing life threatening blood clots

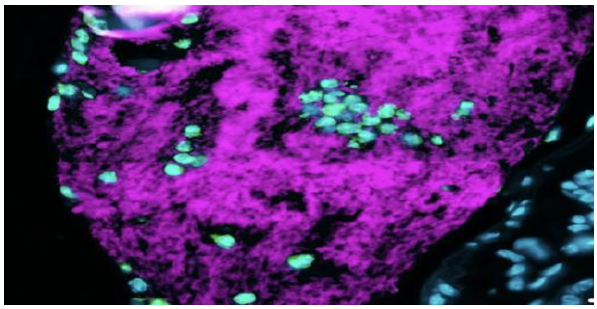
Inventors

Freda Passam, Xuyu Liu, Jose Sail Perdomo.

Scientific Data

Additional data and information is available at:

https://www.passamlab.com/



Fibrin (magenta) and white cell (cyan) in a clot extracted from the lung of a mouse with HIT (Dr Jose Perdomo)

Contact Commercialisation Office
Name: Emma-Louise Hunsley
Position: Commercialisation Manager - Sydney Biomedical Accelerator
Email: emma-louise.hunsley@sydney.edu.au | Phone: 0437468275
sydney.edu.au/innovation-and-enterprise