

CLipPA Cystine Lipidation on a Peptide or Amino acid

A proprietary platform for the site-specific conjugation of lipids to peptides.

Background

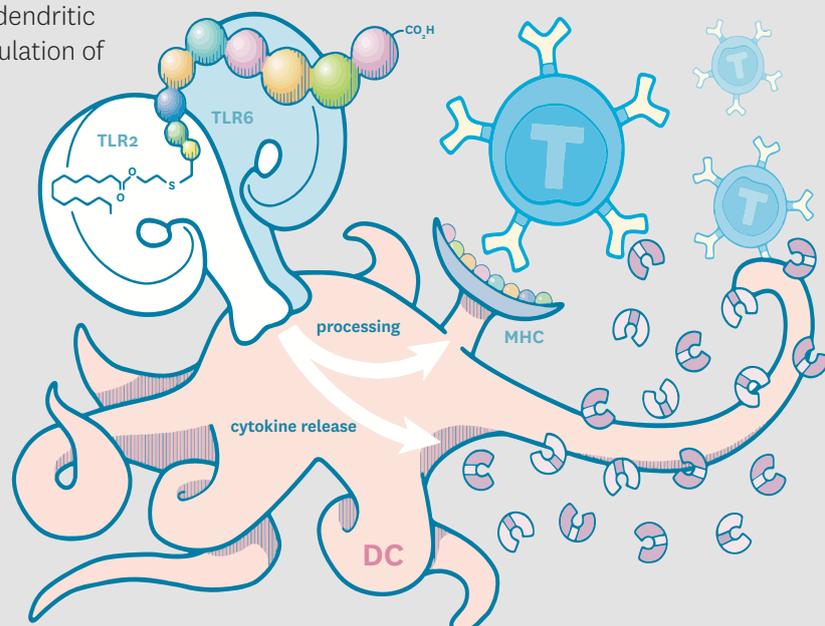
Synthetic peptide vaccines generally comprise a synthetic copy of an immunogenic part of protein antigens. This approach to vaccine development has a number of advantages, including ease of synthesis, avoidance of potentially toxic biological by-products and straightforward characterisation.

A key issue in the development of peptide vaccines is the lack of immunogenicity displayed by peptides as sole vaccine components. It is usually necessary to include in the vaccine an adjuvant, designed to activate components of the innate immune system (e.g. Freund's adjuvant). Self-adjuncting vaccines have this adjuvant covalently linked to the vaccine and may have enhanced antigen uptake, presentation and dendritic cell maturation compared to simple co-formulation of the antigen with an external adjuvant.

Technology

Toll-like receptors (TLR's) are highly conserved pattern recognition receptors responsible for the activation of the immune system. Certain lipopeptide motifs are known to signal through TLR2 heterodimers expressed on the cell surface of a range of immune cells.

Through our proprietary CLipPA reaction, we are able to rapidly and efficiently install lipid adjuvants on to peptide therapeutics, increasing their immunogenicity effects while also improving the pharmacokinetic properties and decreasing toxicity.



Major advantages

- Provides an efficient and benign method to introduce lipid adjuvants to peptide therapeutics.
- Greater efficacy with significantly reduced nephrotoxicity compared to current standard of care.

Applicable to ALL peptide therapeutics

- Cancer vaccines.
- Novel lipopeptide antibiotics.
- Improved pharmacokinetics of existing peptides.

UniServices by the numbers

Total external research funding:

\$261.3M

(35% increase over 2020)

45

companies started in the past five years

\$1.25BN

Total market capitalisation of companies formed

\$73.5M

Net asset value of the University of Auckland Inventors' Fund

17,335 Covid-19 vaccinators trained by the Immunisation Advisory Centre in 2021

1,700

New Zealand teachers reskilled and upskilled through Tui Tuia | Learning Circle professional learning and development in 2021

3,000

clinical staff at 22 DHBs trained through teamwork-based acute care simulations designed by NetworkZ in the past five years

14,391 times that child and youth mental health workers attended Whāraurau e-modules, trainings and workshops in 2021

UniServices

UniServices is a not-for-profit company of the University of Auckland that champions research and ideas with the power to change the world. From seeking out and bringing together partners in academic institutions, industry and government to build new knowledge and solutions through research; to whakatupu (nurturing) and commercialising the ideas and intellectual property that arise from the University of Auckland's great minds, we act as the kaihono (those who join and link people to people, and people to projects) firmly entrenched in the ecosystem that bridges the world of academia with business, government and our communities.

University of Auckland

Waipapa Taumata Rau | The University of Auckland is New Zealand's largest and leading university. The name Waipapa Taumata Rau, gifted to the University by Ngāti Whātua Ōrākei, refers to the 'place of many peaks' – places to strive for, ascend to and succeed. We also rank in the top 10 globally for sustainable development impact. The University supports economic growth locally and nationally through innovation and entrepreneurship, creating quality jobs and high-value businesses, and producing graduates that contribute to our economy and society for the benefit of all.

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