

Kinase KING

Kinase Inhibitors for the Next Generation



A platform for rapid development of highly selective next-generation protein kinase inhibitors.

Background

Kinase inhibitors are used to treat a diverse range of disease. They have been a very successful area of drug development, with more than 70 approved drugs and over US\$50 billion in annual sales reported.

However, these drugs have two major limitations:

1. Selectivity – Kinase inhibitors often have activity against multiple kinases in addition to the intended target, resulting in substantial off-target activity that can have significant adverse effects due to inhibition of ‘healthy’ cell signalling and function. There is a need to develop more selective kinase inhibitors.
2. Resistance – Many cancers develop resistance to kinase inhibitors through mutations in the kinase being targeted. There is a constant need to develop new kinase inhibitors to combat these mutated forms.

Technology

We have discovered novel kinase inhibitor chemistry that is amenable to the rapid development of highly potent and highly selective next-generation protein tyrosine kinase inhibitors that overcome the problems described above.

Using this platform, we have developed a pipeline of kinase inhibitor candidates for a range of targets, including inflammation targets such as CSF1R, oncogenic mutation-selective compounds for application in c-Kit driven tumours, potential pain and oncology targets in NTRK, angiogenesis modulators through VEGFR2, fibrosis using poly-pharmacological profiles that include PDGFR, DDR, EPH and VEGFR classes of proteins, and early hit stage molecules for new immunotherapy-boosting targets such as HPK1.

Major advantages

- Unique universal scaffold-based approach
- Rational design and build of bespoke kinase inhibitors
- Rapid development
- Highly selective
- Highly potent
- Novel IP

Applications

Our platform can be used to develop new drugs for application in range of diseases, including various oncology application including immunotherapy and oncogenic kinase signalling, Parkinson's disease, fibrosis and autoimmune disease.

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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