

CSF-1R inhibitor discovery programme

A unique scaffold and structure-based approach to synthesise highly potent CSF-1R inhibitors for cancer therapy.

Importance of targeting CSF-1R in cancer

Colony-stimulating factor 1 receptor (CSF-1R) is a cell-surface receptor and plays an important role as a regulator of the development, morphology, survival, and functions of tissue macrophages as well as tumour-associated macrophages (TAMs). CSF-1 is involved in the recruitment and survival of TAMs, increased CSF-1 expression is implicated in tumour progression and metastasis and is associated with poor prognosis in some cancers.

Technology

A clinically beneficial antagonist with a highly selective ability to inhibit the serotonin 5-HT_{2A} receptor has been discovered to act as a 'clean' drug. The compound has shown great potency in its antagonistic mechanism and the selective binding will also be complemented with its ability to reduce the prevalence and severity of side effects. Combined with its enhanced efficacy, this compound has the potential to provide a new direction for the treatment for psychiatric disorders and beyond.

Major advantages

Unique scaffold which differentiates our programme from competitors.

Applications

Targeting CSF-1R (c-FMS Kinase) activity has the potential to treat various pathologies and conditions such as:

- Cancer
- Inflammation
- Autoimmune diseases
- Bone disease
- Allograft rejection
- Arteriosclerosis and atherosclerosis



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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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