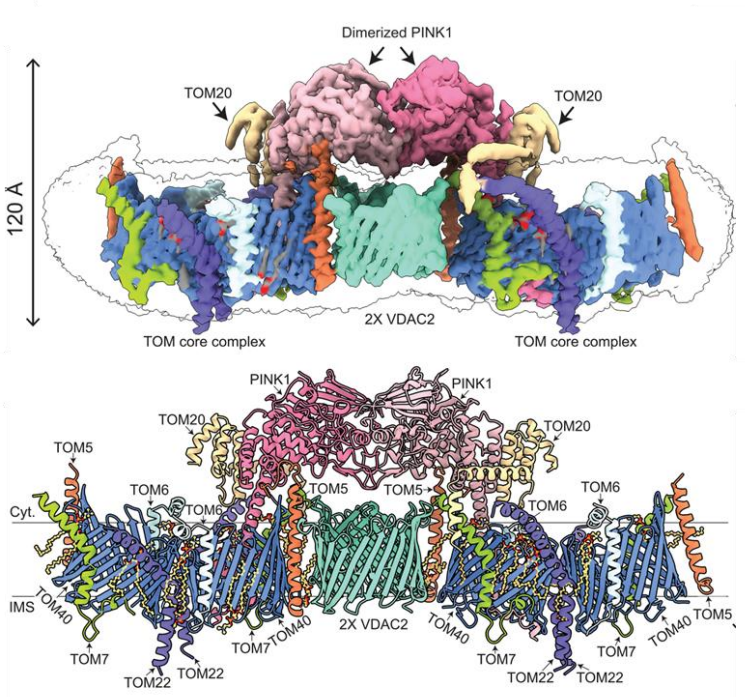
Boosting PINK1 mitophagy as a Parkinson's disease treatment

The Problem

- PINK1 mutations account for ~1% of early-onset Parkinson's disease, a genetically defined subgroup, with dementia affecting nearly all cases.
- The lack of a high-resolution structure for PINK1 has hindered the development of small molecules that specifically target the protein.

The Solution

- We aim to identify a small molecule that specifically and sensitively activates PINK1.
- We aim to target PINK1 to upregulate mitophagy and prevent neuronal stress.
- By restoring mitochondrial quality control, this approach has the potential to prevent or slow disease progression in genetically defined and broader Parkinson's populations.



Our Program

Progress

- Published the first high-resolution human structure of PINK1 on the outer mitochondrial membrane in *Science* 2025.
- Executing protocol for high throughput compound screening to identify PINK1 activators.

Next steps: Complete high-throughput screening, proceed to hit-to-lead optimisation.

Seeking partnership, investment and feedback

Our Team

Dr. Sylvie Callegari, Mitochondrial structural biology
Prof. David Komander, Ubiquitin signalling
A/Prof. Kym Lowes, High throughput drug discovery

Victoria Jameson, PhD, Business Development
jameson.v@wehi.edu.au