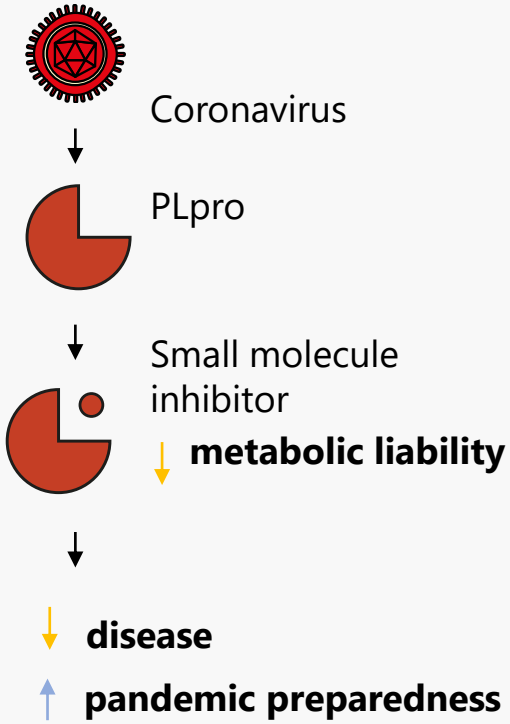
Novel inhibitors of coronavirus Papain-like protease (PLpro)

The Problem

- Three zoonotic coronavirus outbreaks since 2002
- COVID-19 persistence and likelihood of future coronaviruses with pandemic potential
- Known issues with 1st-generation antivirals prevent widespread adoption in the most vulnerable populations

The Solution

- PLpro is essential for viral replication[1] and is pro-inflammatory[2]
- Inhibition of PLpro could reduce both *viral load* and *inflammation*
- An inhibitor could be used as monotherapy or in combination to improve efficacy and reduce viral replication



Our Program

- Potential for a first-in-class oral inhibitor of PLpro with no CYP inhibition
- Non-peptidomimetic, non-covalent inhibitor with single digit nM activity *in vitro* and activity in a published *in vivo* model of SARS-CoV-2 infection[3]
- Broad-spectrum anti-coronavirus activity confirmed to enable pandemic preparedness
- On-track to assess *in vivo* efficacy in our Long COVID animal model in the next 3 months

Our Team

- Led by a multi-disciplinary team of drug discovery veterans with industry collaboration experience
- Victoria Jameson, PhD, Business Development Lead, jameson.v@wehi.edu.au

[1]Klemm et al., *EMBO J.*, 2020; [2]Munnur et al., *Nat. Immunol.*, 2021; [3]Bader et al., *PNAS*, 2023