

Leads



Craig Fenwick
CHUV
Academic Lead



Trudi Veldman
Abbvie
Industry Lead

Key Objectives of WP4

- Monitor SARS-CoV-2 spike sequence diversity
- Identify and generate broadly neutralising monoclonal antibodies against SARS-CoV-2 spike protein using four parallel strategies
- Rapidly assess identified monoclonal antibodies for *in vitro* potency, breadth, binding epitope and safety profile
- Optimize lead candidates for good drug-like properties
- Assess pharmacodynamic profiles of selected leads
- In-depth analysis of antibody mode of action
- Detailed characterization of structural antibody-virus interactions

CONNECTIONS

with other work packages



Work package 1

Initial antibody testing in cell-based pseudovirus infection assays

Work package 2

Spike structural biology workflow

Work package 5

Guidance for selection of SARS-CoV-2 patient cohorts for antibody isolation from B cells

Work package 6

In vivo evaluation of antibody efficacy and PK in hamsters and cynomolgus monkeys

BREAKTHROUGH moments



2021

P5C3 antibody discovered

Retains activity against emerging 2021 SARS-CoV-2 VoCs and demonstrates *in vivo* prophylactic protection in hamsters

2022

P2G3 antibody discovered

Neutralizes emerging 2022 omicron VoC and confers full protection in monkeys

Cryo-EM white paper published

Proof of concept high-throughput cryo-EM innovation enabling fast generation of large numbers of structures

2023

P4J15 antibody discovered

An ACE-2 mimetic neutralizing antibody

2024

PDCOV antibodies discovered

Preparedness antibodies against an emerging and zoonotic porcine CoV

APN antibodies discovered

Novel broad-spectrum antibodies targeting APN, the receptor for PDCoV and other coronaviruses

KEY STATISTICS

Antibodies that protect in *in vivo* virus challenge models **3**

Fab and spike structures generated **>30**

Repeated development of new pseudoviruses and binding assays due to spike VOC mutations **20**

Antibody binding studies conducted **>50,000**

Pseudovirus studies conducted **>5,000**

Peer reviewed publications **4**

Partner Organisations

