



# Rapid Development and Deployment of Monoclonal Antibodies for the Prevention and Treatment of Infectious Disease

**WRAIR**  
Walter Reed Army  
Institute of Research  
Soldier Health • World Health

## Global Presence

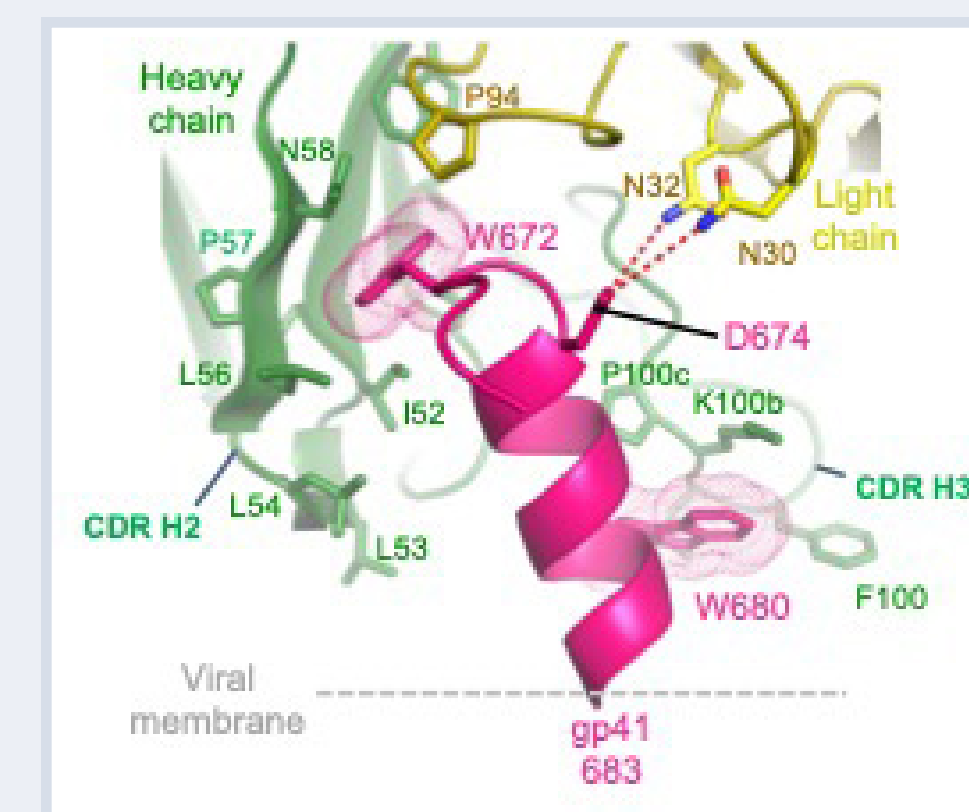
Our international research expertise will make your project a success anywhere in the world.



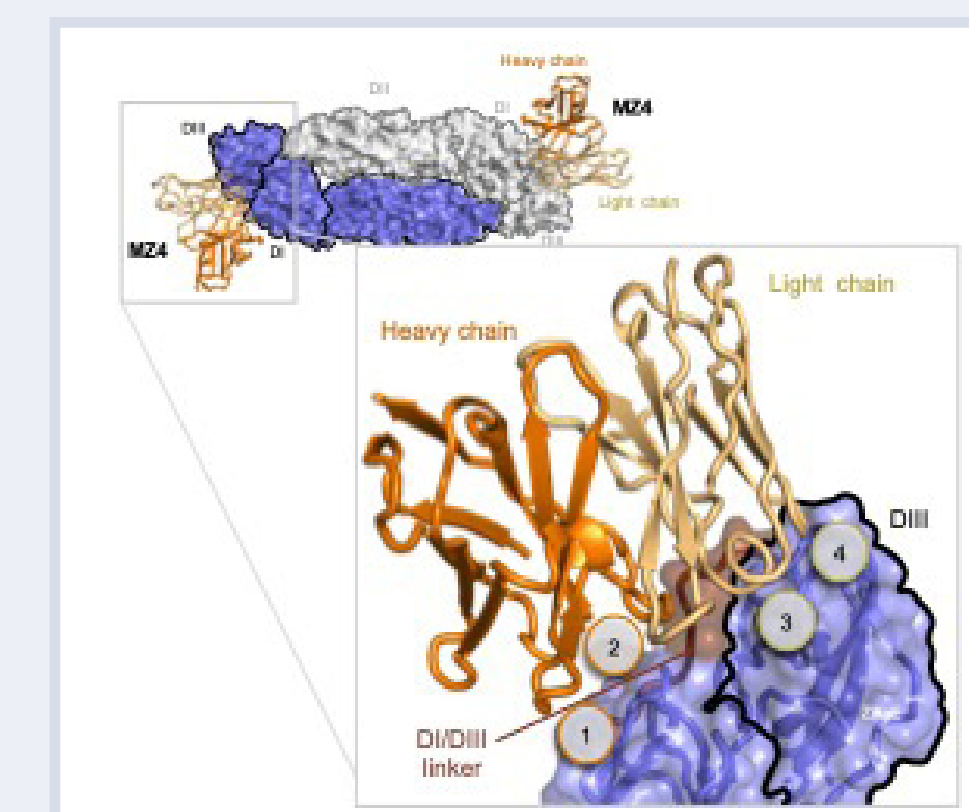
**EIDB**  
EMERGING INFECTIOUS  
DISEASES BRANCH

**MHRP**  
U.S. MILITARY HIV RESEARCH PROGRAM

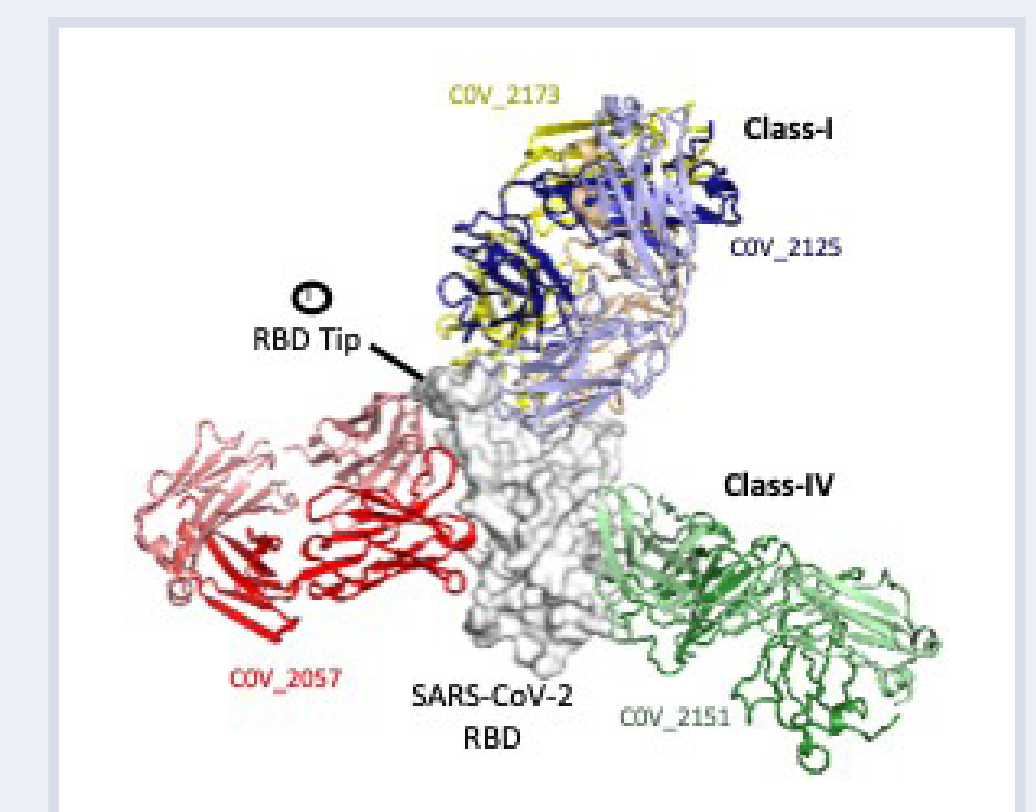
## Countermeasures for Pathogens of Concern



**HIV**  
Krebs, et al, Immunity, 2019



**Zika, Dengue 1-4**  
Dussupt, et al, Nature Medicine, 2020



**SARS-CoV-2, SARS-CoV-1**  
Dussupt, et al, Nature Immunology, 2021

## Monoclonal Antibodies (mAbs)

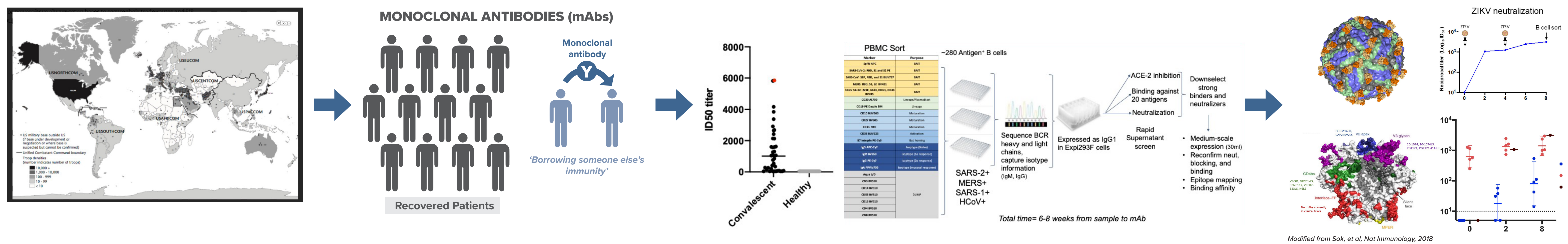
Provides immediate prophylactic protection, and protection lasts 6-9 months

Therapeutic use post-exposure to limit disease; can be combined with antibiotics

Development from Discovery through Preclinical testing less than 4 months

Path for FDA approval is generally faster compared to small-drug molecules or vaccines

## Monoclonal Antibodies Development Pipelines



**1** | Samples from sites around the world

**2** | Isolate mAbs from convalescent patients

**3** | B cell sorting, sequencing, expression of mAbs, down selection of mAbs

**4** | Functional and biochemical assays

## Rapid Prophylaxis and Treatment Development: WRAIR-2125 COVID-19 mAbs



**MAY**

Cycles of isolating and characterizing mAbs completed. WRAIR-2125 neutralizes the original strain of SARS-CoV2, all current circulating variants of concern, as well as other human coronaviruses.

**OCTOBER**

Start of cGMP process development and manufacturing activities for WRAIR-2125.

**FEBRUARY**

WRAIR mAbs targeting SARS-CoV-2 RBD neutralize Omicron. mAbs isolated from K18 mice vaccinated with SpFN were found to potentially neutralize multiple sarbecoviruses, including SARS-2 Omicron and SARS-1.

**JULY**

pK studies in NHP initiated.

**JULY**

WRAIR begins work to discover potent neutralizing mAbs targeting all SARS-CoV-2 VOCs.

**AUGUST**

WRAIR-2125 identified as leading contender among combinations of mAbs that potentially neutralize all VOCs, including Delta and Gamma.



**DECEMBER**

First reported cases of COVID-19 reported in Wuhan, China

## HJF Capabilities to enable Innovation Development

- Identify & apply for research funding opportunities
- Identify talent & build research teams/labs
- Administer & manage research programs/projects
- Strategic translation of innovations through existing partnerships/licensing
- Recruitment & execution of clinical trials through network of worldwide sites.
- Communication & Public Relations

## HJF Major Research Areas of Interest

Oncology, Chemical, Biological and Radiological Defense, Clinical/Rehabilitative Research, Combat Casualty Care, Human Performance, Infectious Disease, Precision Medicine, Traumatic Brain Injury/Post-traumatic Stress Disorder/Mental Health

## Contact

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