



PANV, Inc.

Pan-antiviral antibody strategy targeting conserved post-translational modification

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PanV, Inc. Team



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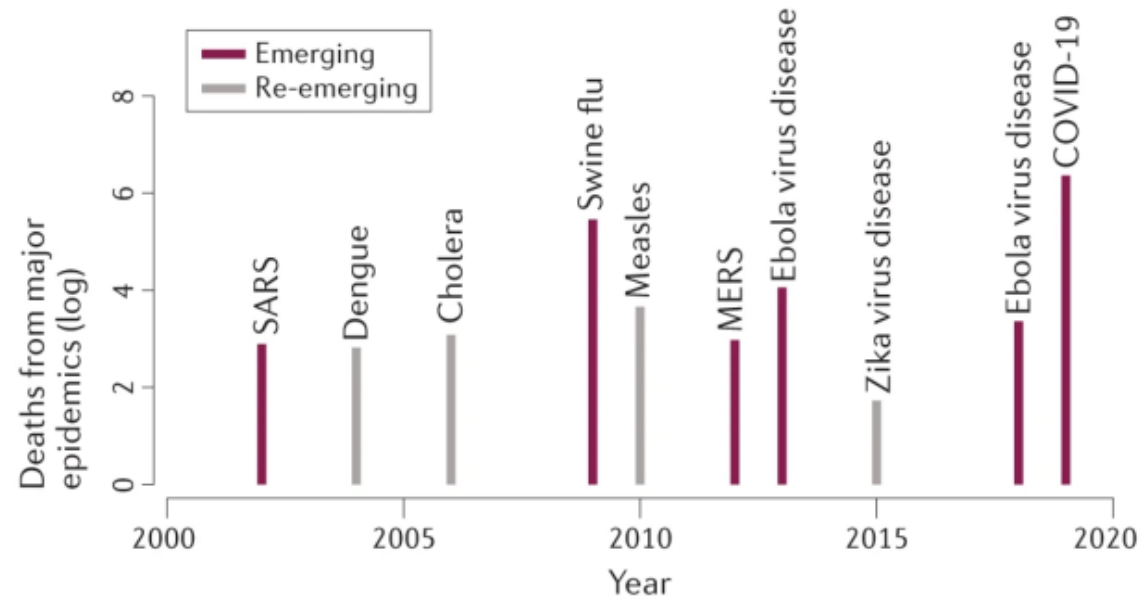


Jennifer Beecham

Yale Ventures, Associate Director
Blavatnik Fund

Log deaths from major epidemics in the twenty-first century

Problem:
Challenges in
being prepared
for diverse viral
outbreaks

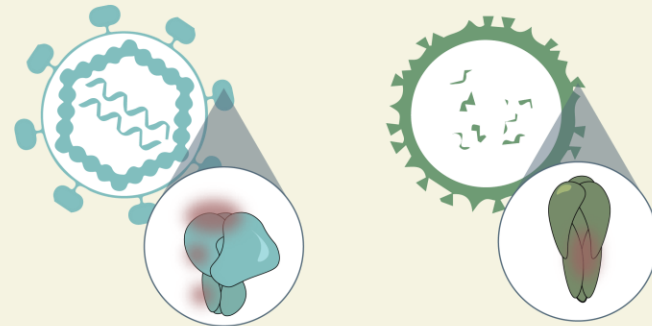


- New viruses: cross-species transmission of zoonotic viruses have led to epidemics and global pandemics.
- New strains: RNA viruses have high mutation rate of up to a million times higher than the vertebrate host.

Sources: R. Baker et al, 2021, <https://www.cdc.gov/eis/about/history.html>

Solution: Developing pan-viral assets targeting diverse viruses

Broadly neutralizing antibodies

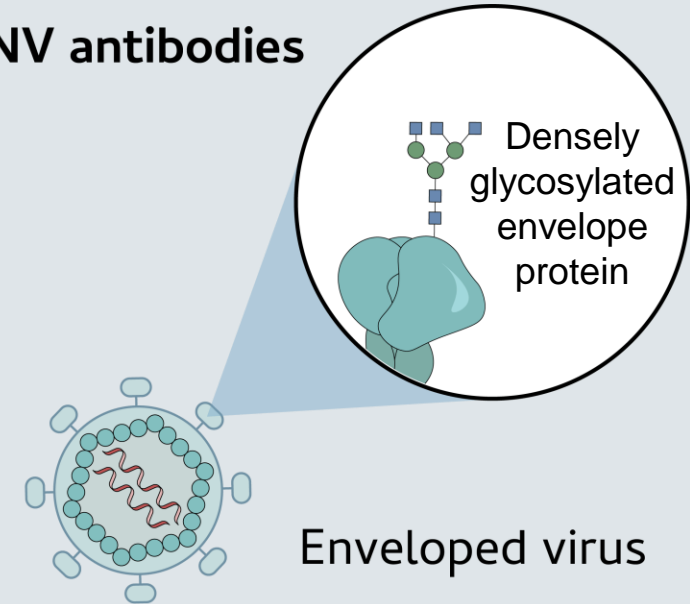


HIV

Influenza

- Target conserved peptide epitopes
- Targeted epitopes mutate less frequent

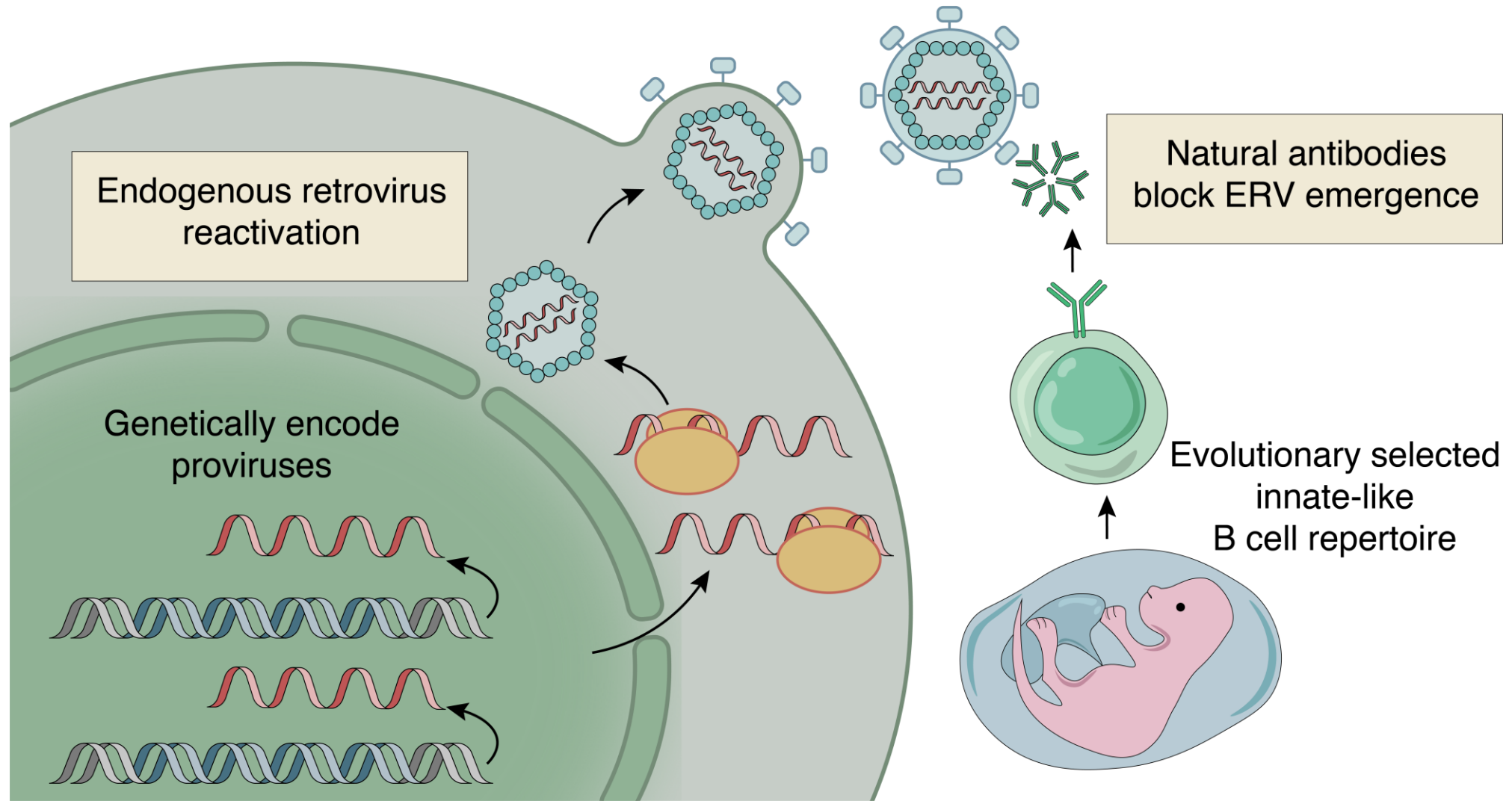
PANV antibodies



Enveloped virus

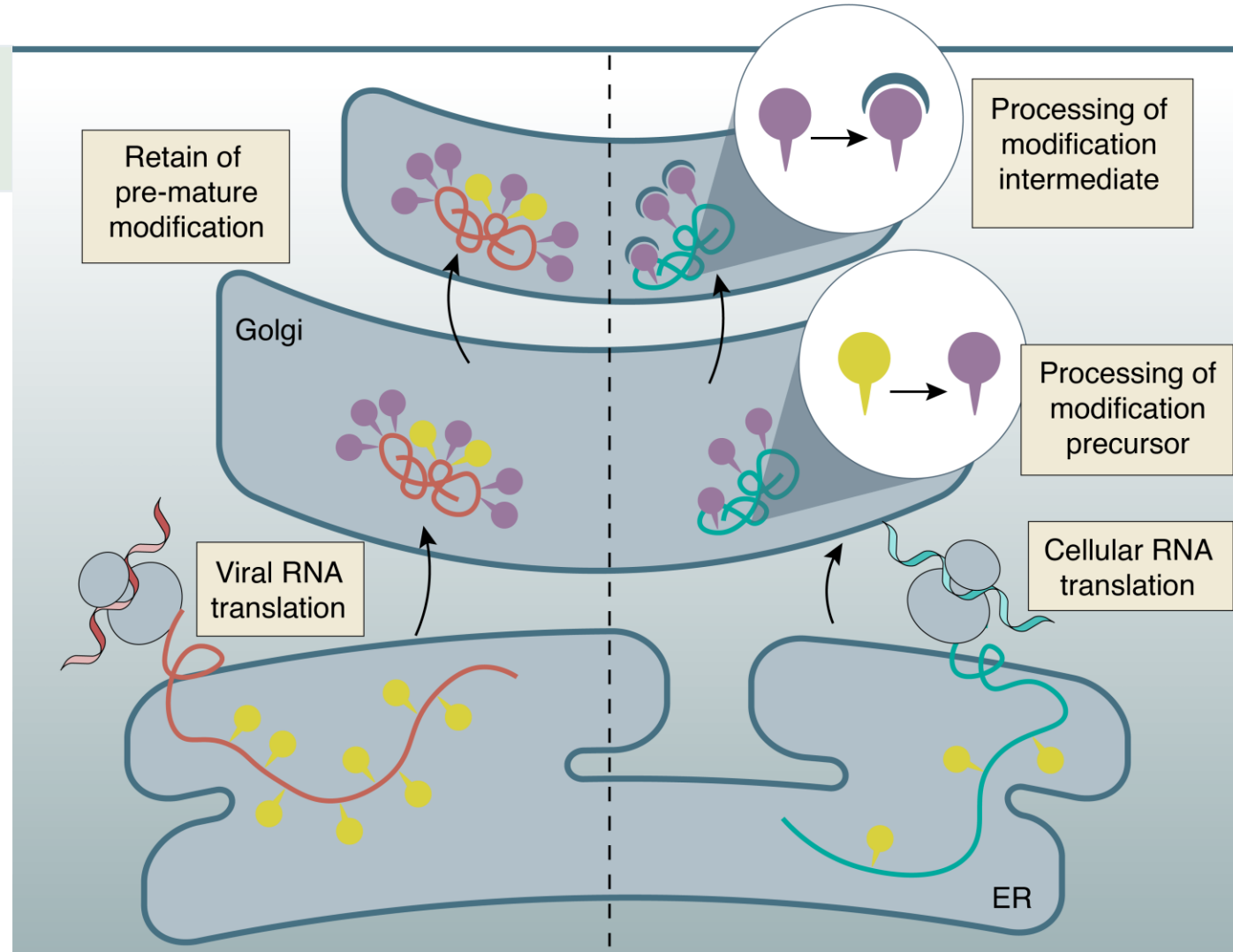
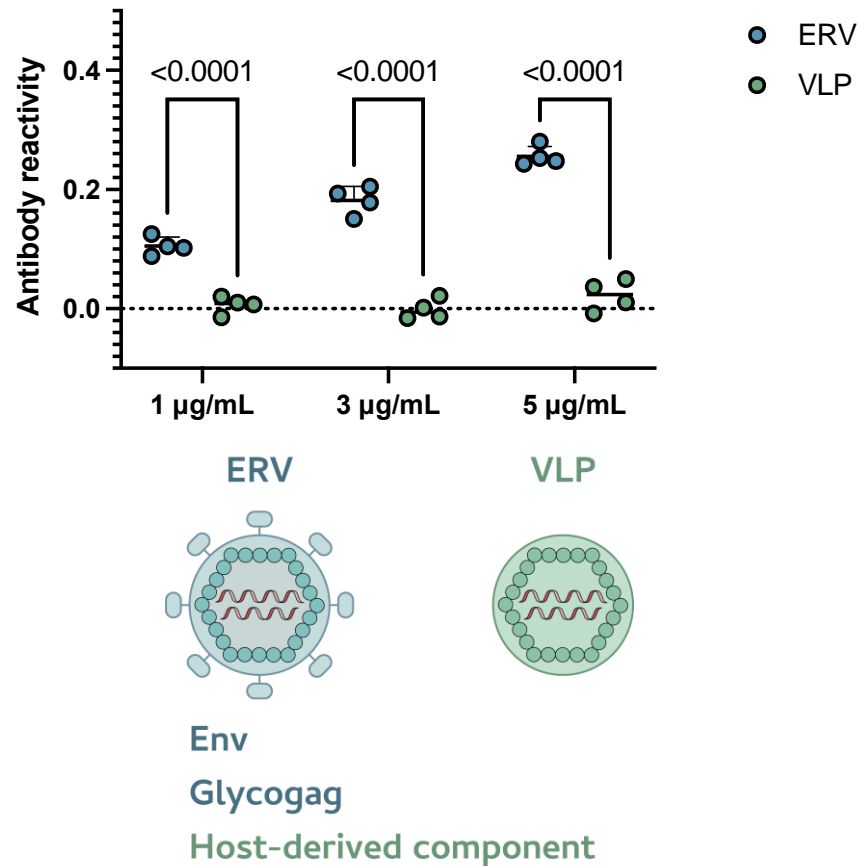
- Look beyond peptide sequence
- Targeted epitopes are intrinsic feature of viral post-translational modification

The inherent broad reactivity of innate-like B cells



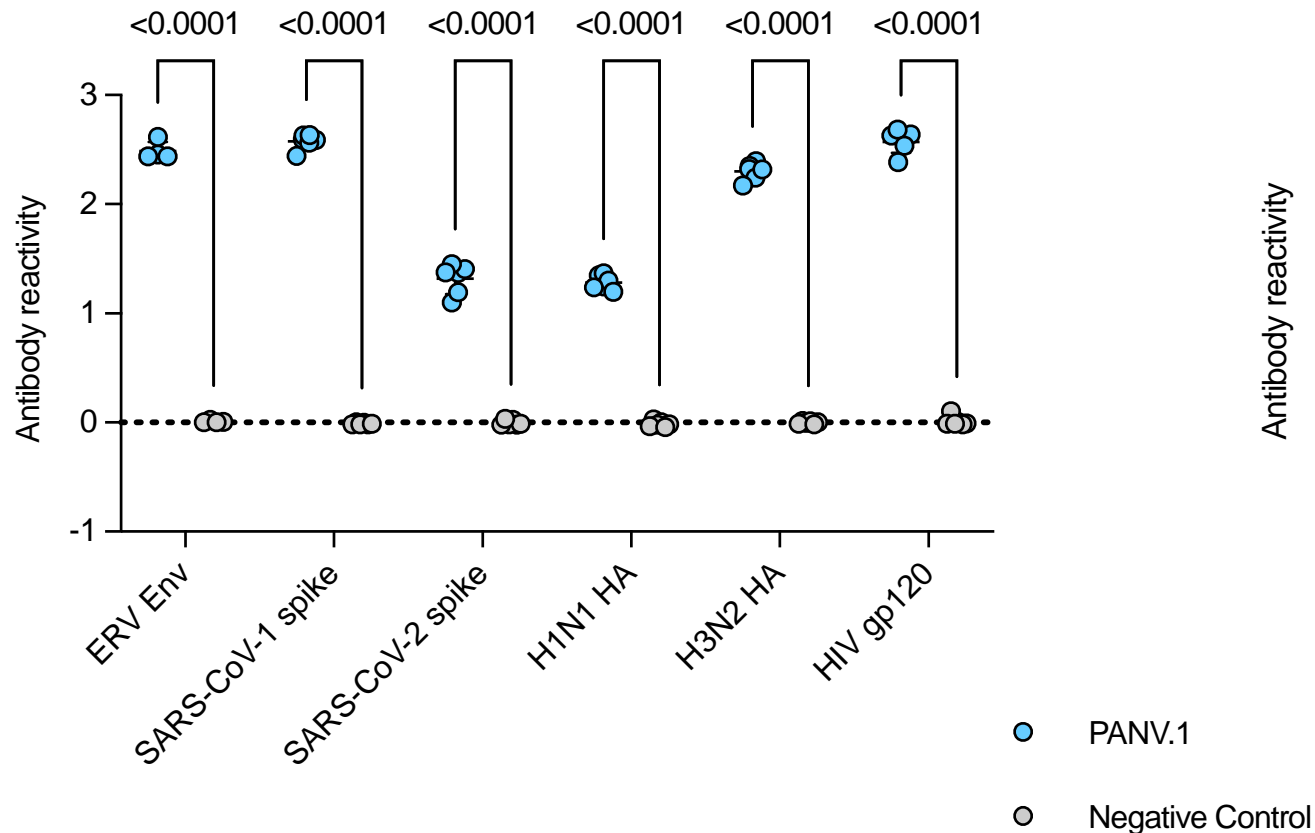
PANV.1 recognizes “non-self” modification

PANV.1 recognizes viral derived components exclusively

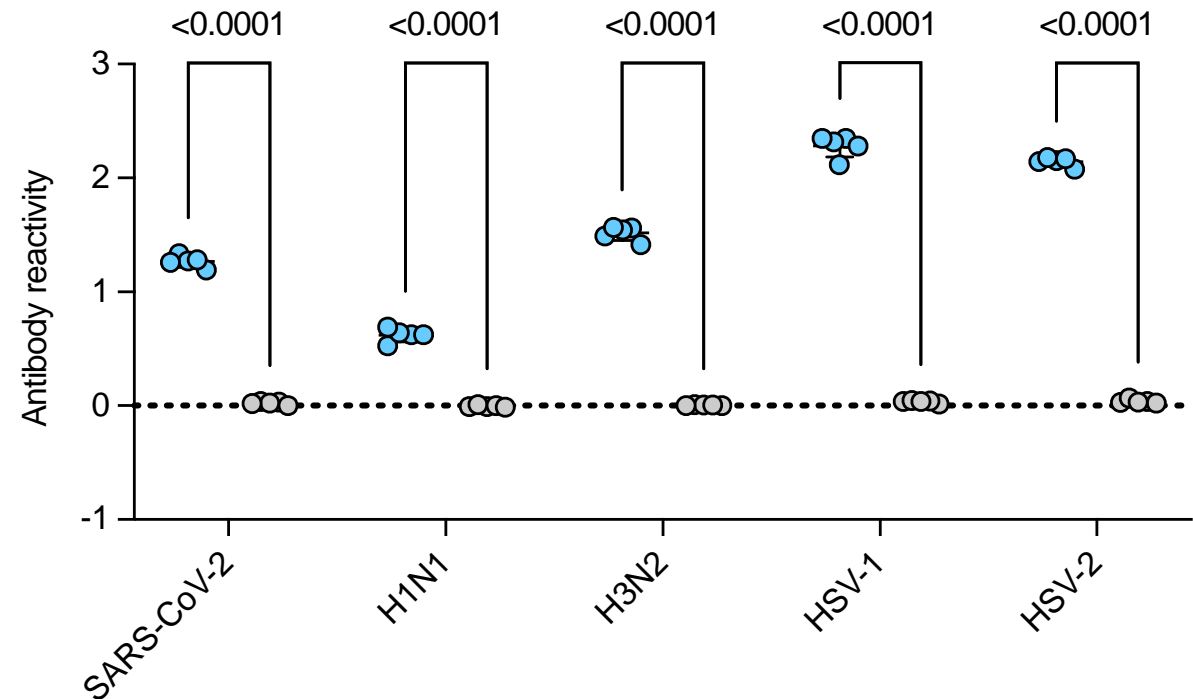


PANV.1 recognizes a broad range of viruses

PANV.1 recognizes viral glycoproteins



PANV.1 recognizes viral particles



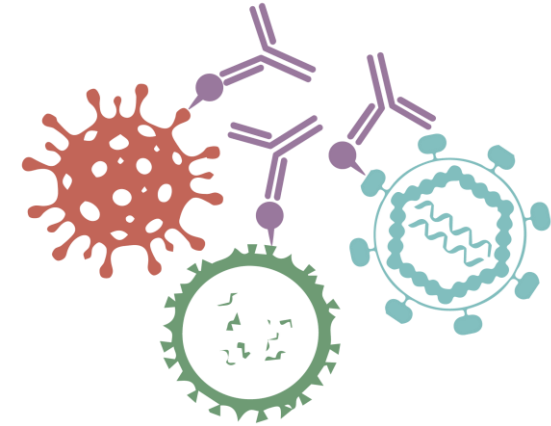
Competitive landscape and pan-antiviral antibody advantages

Vaccines



- Current vaccines mostly target one virus
- Vaccine is not always effective because of poor host response or mutations in target peptide epitopes
- “Pan-viral” vaccines under development that target a family of viral particles but cannot target multiple families

Pan-antiviral Antibody



- Broad range of virus targeting including DNA and RNA viruses
- Antigenic target not virally encoded, not mutable
- Pandemic ready

Virus Specific Monoclonal Antibodies



- Limited range of specificity
- Long timeline of manufacturing and regulatory that races against virus mutations
- Beyfortus (Antibody for RSV) has earned approvals in US and EU in infants. Peak sales projected at \$3B by 2030.

Potential Development Pathways:

Number of pathogens to explore pre-clinically for prophylaxis and/or treatment



Respiratory Pathogens

- Influenza A – **H5N1 of interest for pandemic preparedness**
- Influenza B
- SARS-CoV-2
- Human metapneumovirus
- RSV



Vector borne

- Chikungunya
- Dengue
- Zika
- West Nile



Biothreat Pathogens

- Filoviruses – **Zmapp available for Ebola**
- Lassa and other arenaviruses
- MERS (respiratory)
- Arbovirus (JEE, EEE, SLE, WEE)



Transplant Patients

- **Intolerant/resistant to direct antivirals**
- Herpesviruses



Chronic/Recurring Viruses

- Herpesviruses

Near Term Milestones and Capital Plan

Current Progress - Blavatnik Fund (\$400K)

- Understood nature of binding between PanV.1 and antigen
- Producing humanized antibody

Anticipated 2023 Milestones

- Library of humanized antibodies
- Selection of candidate therapeutic

Capital Plan

- Seeking co-lead for pre-Series A
- Commitment for \$5M equity investment from the Gates Foundation

Activity	2023		2024		2025	
	1H 2023	2H 2023	1H 2024	2H 2024	1H 2025	2H 2025
Produce humanized antibody and optimize (<i>WuXi Biologics</i>)						
Antibody Validation	In vitro assays					
Pre-clinical efficacy <i>Respiratory: SARS-COV-2, Influenza A, RSV</i>		In vitro		In vivo		
Pre-clinical efficacy <i>Transplant: Herpesviruses</i>		In vitro		In vivo		
Pre-clinical efficacy <i>Biothreat</i>			In vitro	In vivo		
Toxicology		In vitro	In vivo	Single and Repeat ascending dose		
CMC			Formulation	Stability, Standards, Scale up		
Regulatory Advisory						

🚩 Candidate Selection

🚩 IND Filed



Thank you!

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