

Advancing Filovirus Preparedness

Scalable neutralization assays and deep antibody characterization

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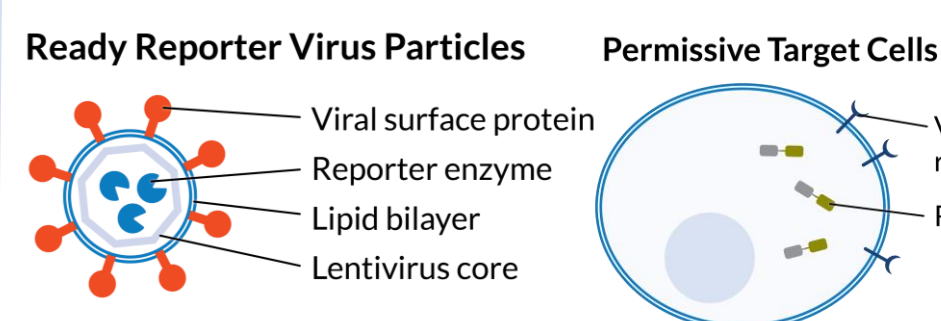
Challenges:

- Support therapeutic antibody and vaccine development
- BSL-2 assay platforms that mitigate hazards of working with 'live' virus
- Critical data within weeks of an outbreak

Solutions:

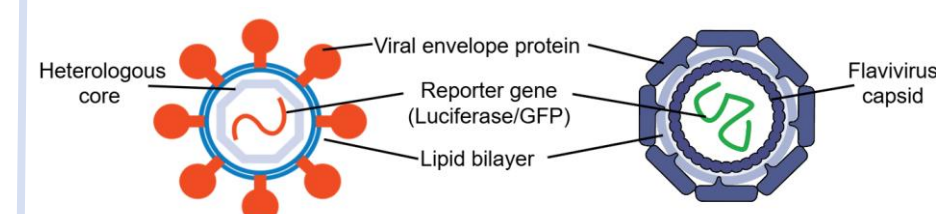
- High-throughput functional neutralization data
- Rapid epitope mapping capabilities
- Rational design and candidate prioritization from large data sets

Ready Reporter Virus™ Kit



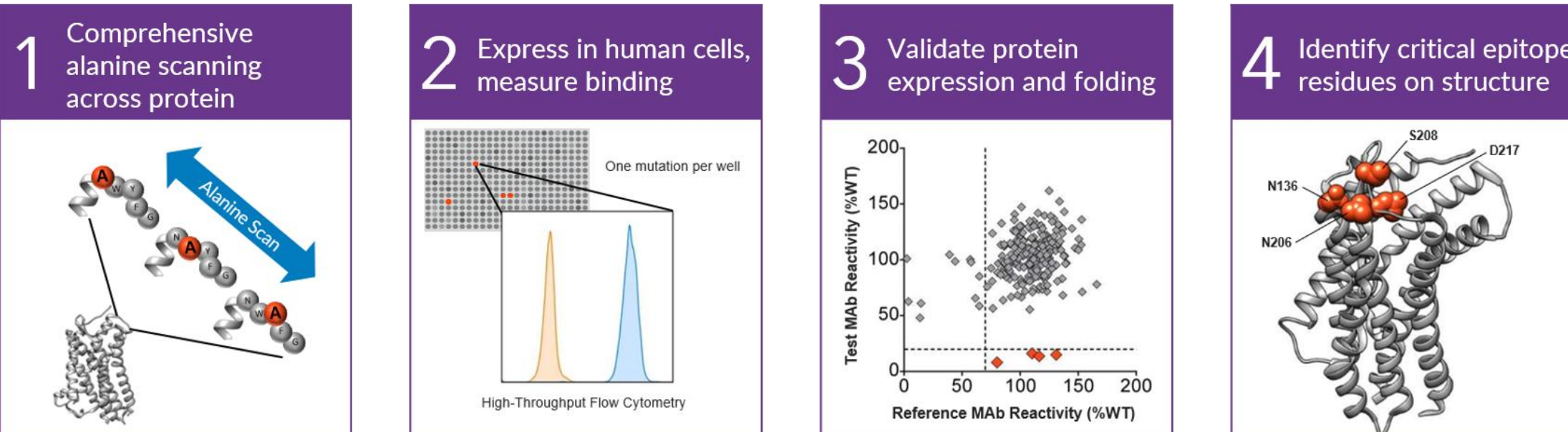
Same-Day Microneutralization

Reporter Virus Particles



Pseudotype Microneutralization

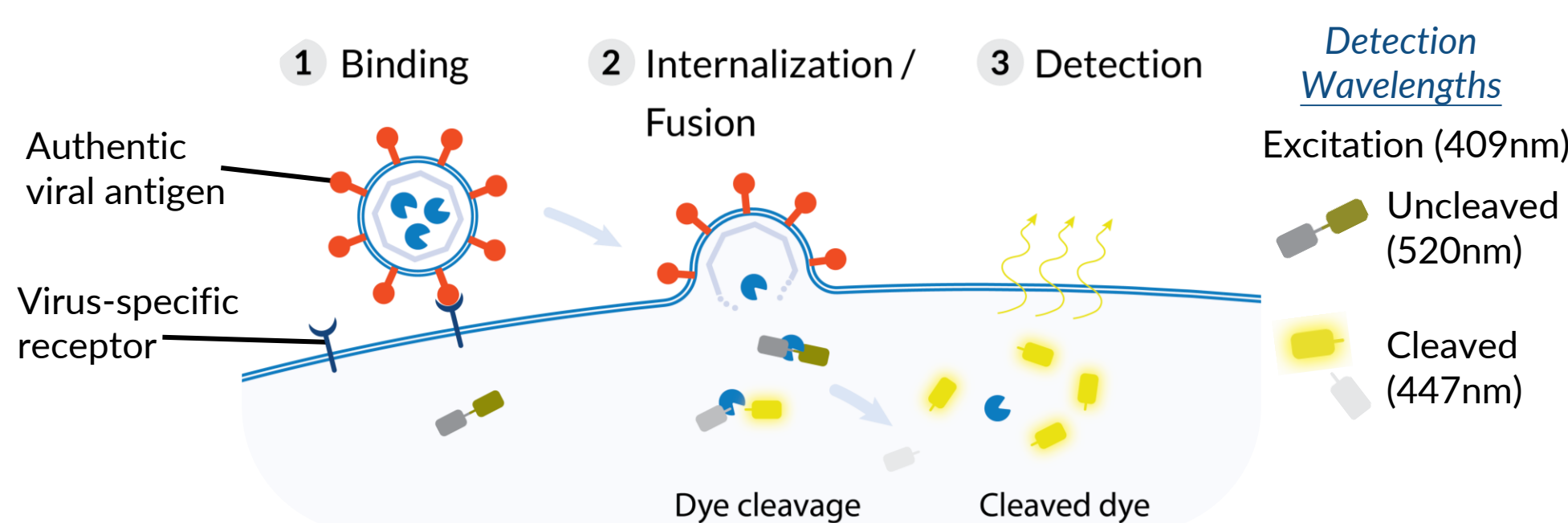
Shotgun Mutagenesis Epitope Mapping



conformational epitopes • single residue resolution • rapid results • >95% success

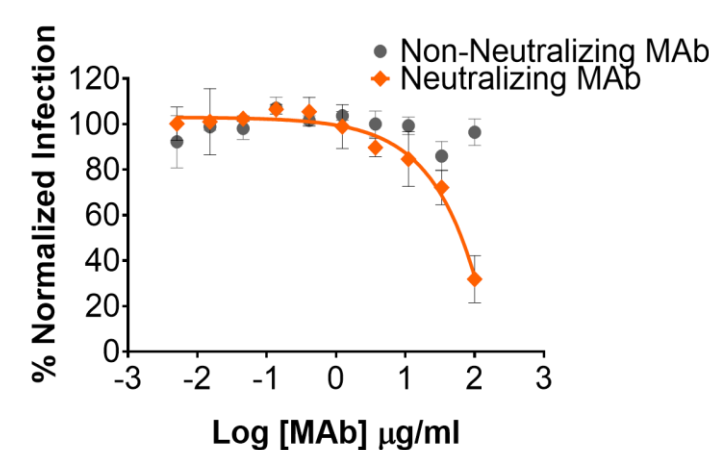
Ready Reporter Virus™ (RRV)

the fastest neutralization assay, no cell culture required

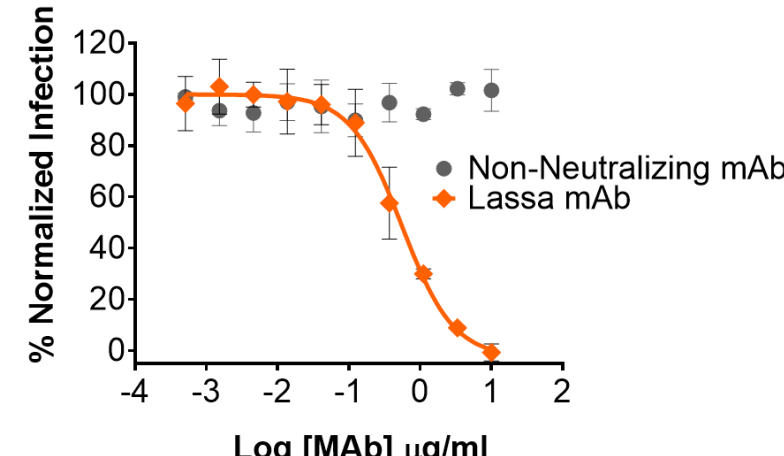


- High-throughput functional neutralization data for antibody discovery and lead selection
- Consistent performance across lots supports QC lot release

Marburg Neutralization



Lassa Neutralization

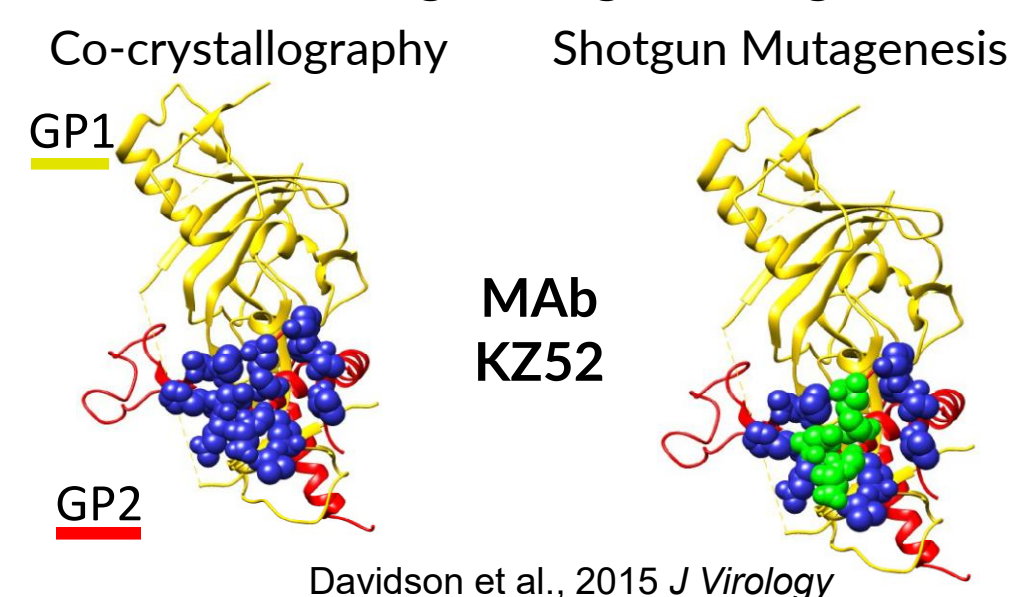


Enzymatic readout for results in <4 hours

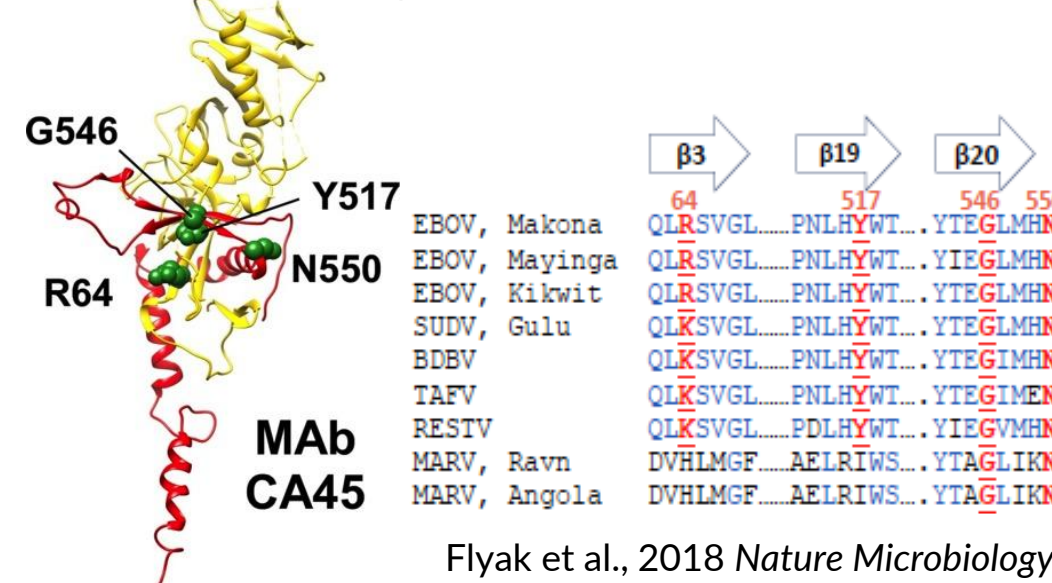
Rapid, Amino Acid Resolution Epitope Mapping

proven success for viral proteins

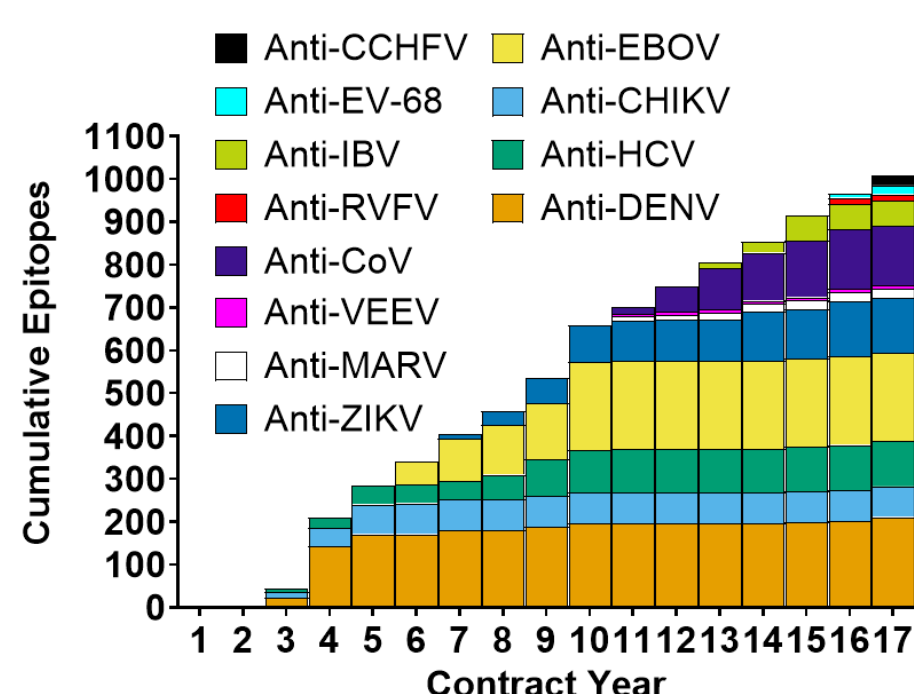
Energetic Hotspots to Enable Protein Antigen Engineering



Broadly Protective MAb Targets Conserved Site

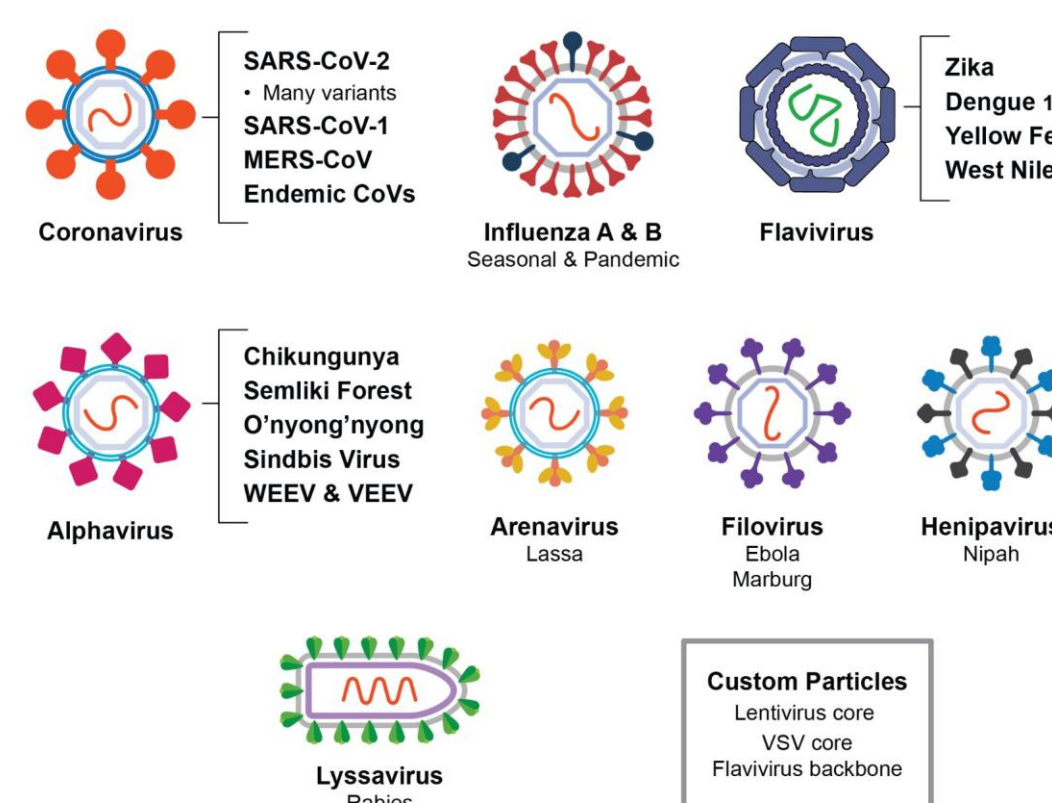


NIAID-Funded Contract: 17 Years of Epitopes Against 12 Targets



- 1,000+ viral epitopes identified across diverse viral families
- >150 epitopes mapped on EBOV GP, 36 epitopes mapped on MARV GP
- Accepting antibodies for RVFV, CCHFV, and EV-68 on collaborative basis
- Custom mapping on a fee-for-service basis

Reliable, Ready-to-Use Viral Particles



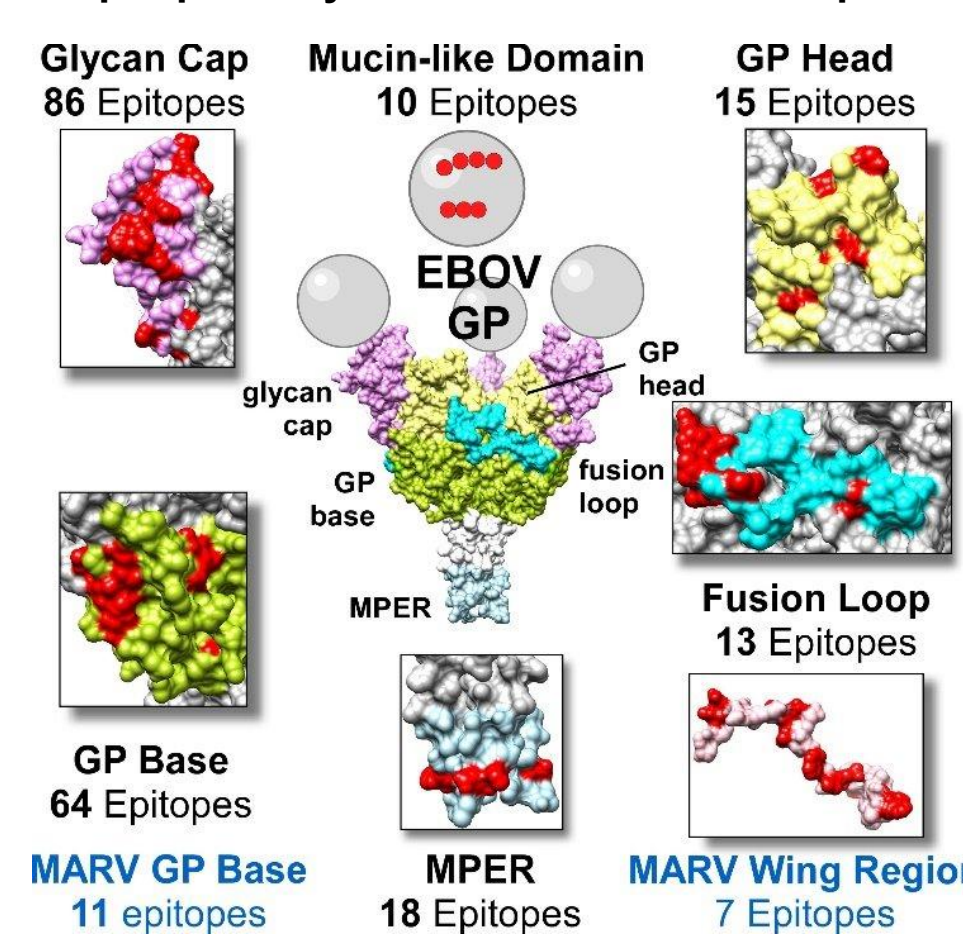
- Non-replicative Reporter Virus Particles for 10+ viral families with 100s of strains and variants available
- 10+ years' experience supplying reagents for bioassays in Phase 2 and Phase 3 clinical trials
- Serving 100+ customers across pharma, biotech, government and academia

Ongoing Study: Rapid identification of Bundibugyo (BDBV) Neutralizing Antibodies

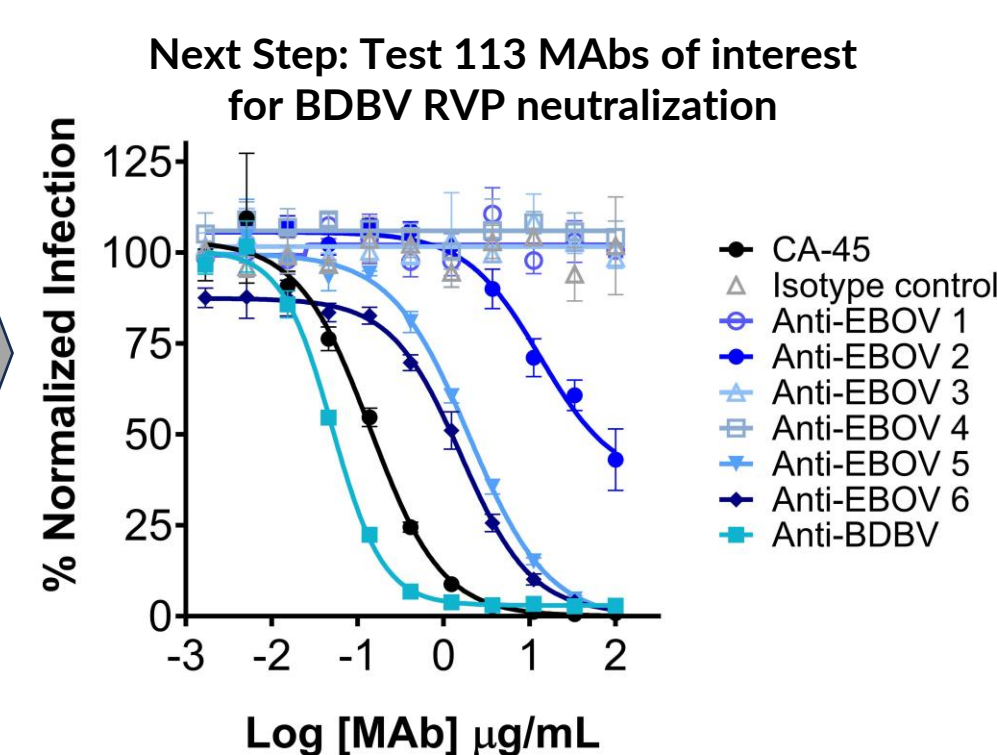
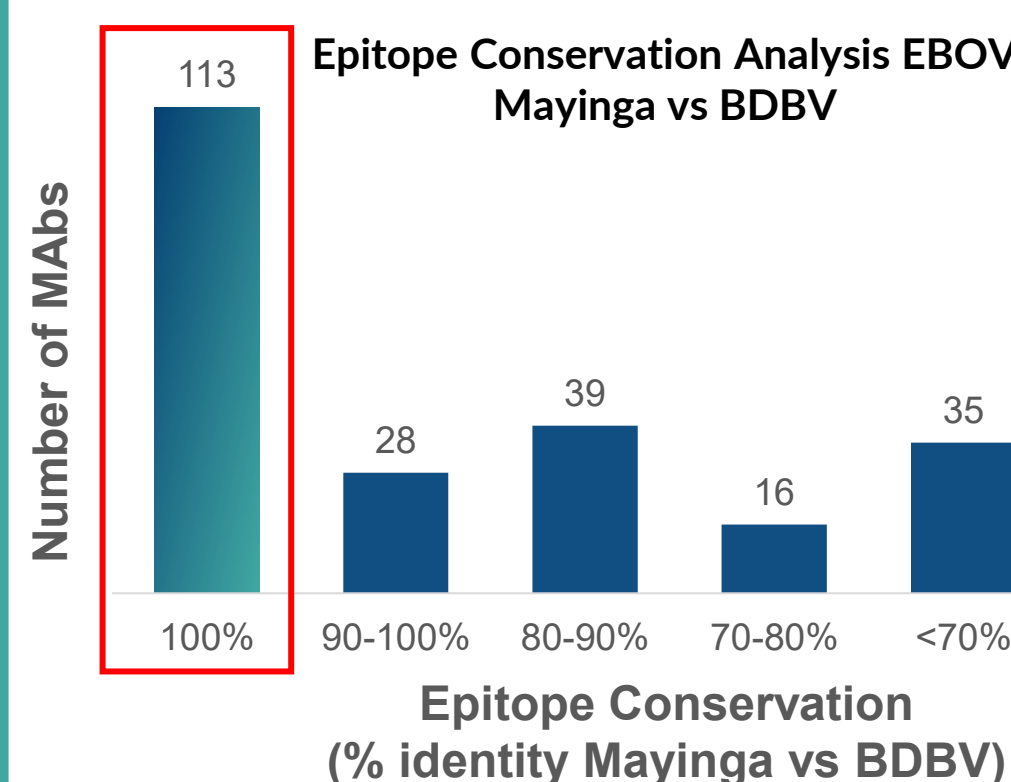
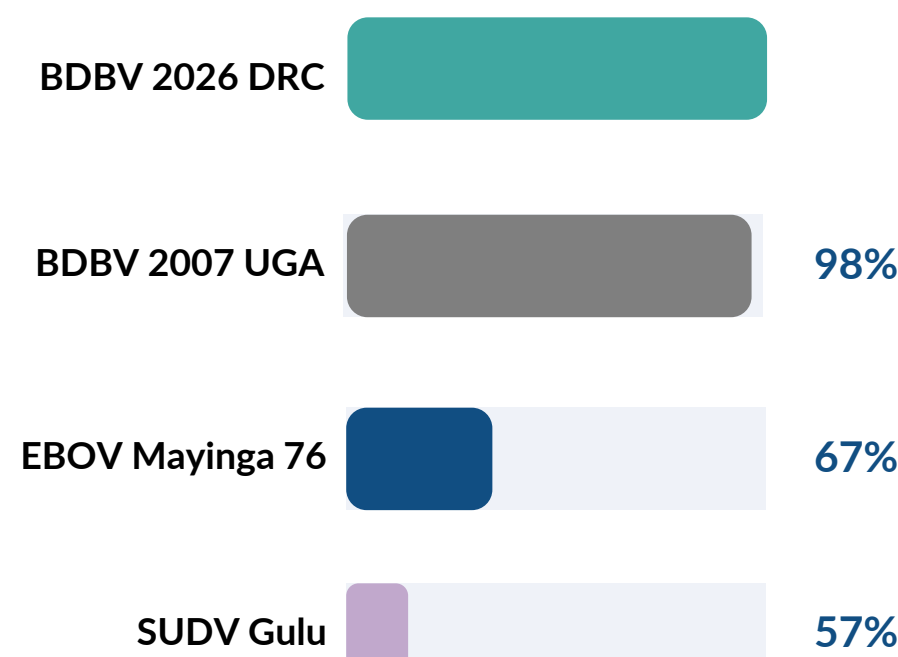
Hypothesis: Epitope data from previously characterized MAbs can be used to predict neutralizers for current BDBV strain

>200 MAbs previously epitope mapped against Mayinga Zaire Ebolavirus

Epitope analysis and database development



Bioinformatic analysis of GP sequence conservation compared to current outbreak



- 113 previously characterized MAbs predicted to bind BDBV, with possibility to repurpose for current outbreak
- Functional analysis in progress using Reporter Virus Particles

