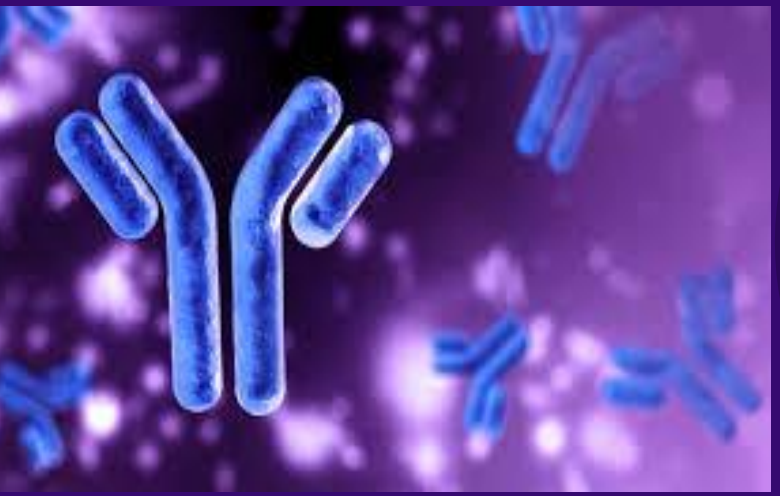
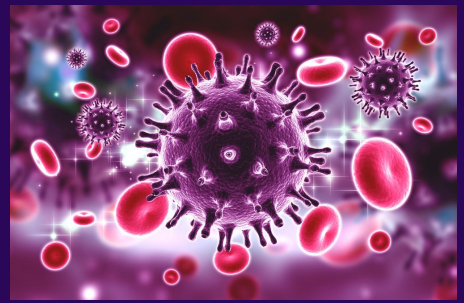


Tailoring Immunogens To Steer The Elicitation Of VRC01-Class Neutralizing Antibodies, A Broadly Cross-Reactive Class Of Neutralizing Antibodies To HIV-1

By: Angela Omrani

Background

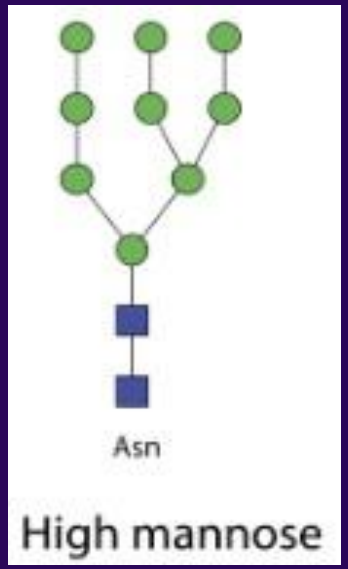
- HIV-1 is a virus that attacks and weakens the immune system
- Broadly Neutralizing Antibodies (bnAbs) are proteins that prevent many different strains of a virus
- VRC01-Class bnAbs are one of the most potent bnAbs but are very rare
- A germline-targeting immunogen is a substance that activate the body's immune response
- eOD-GT8 is a type of germline-targeting immunogen



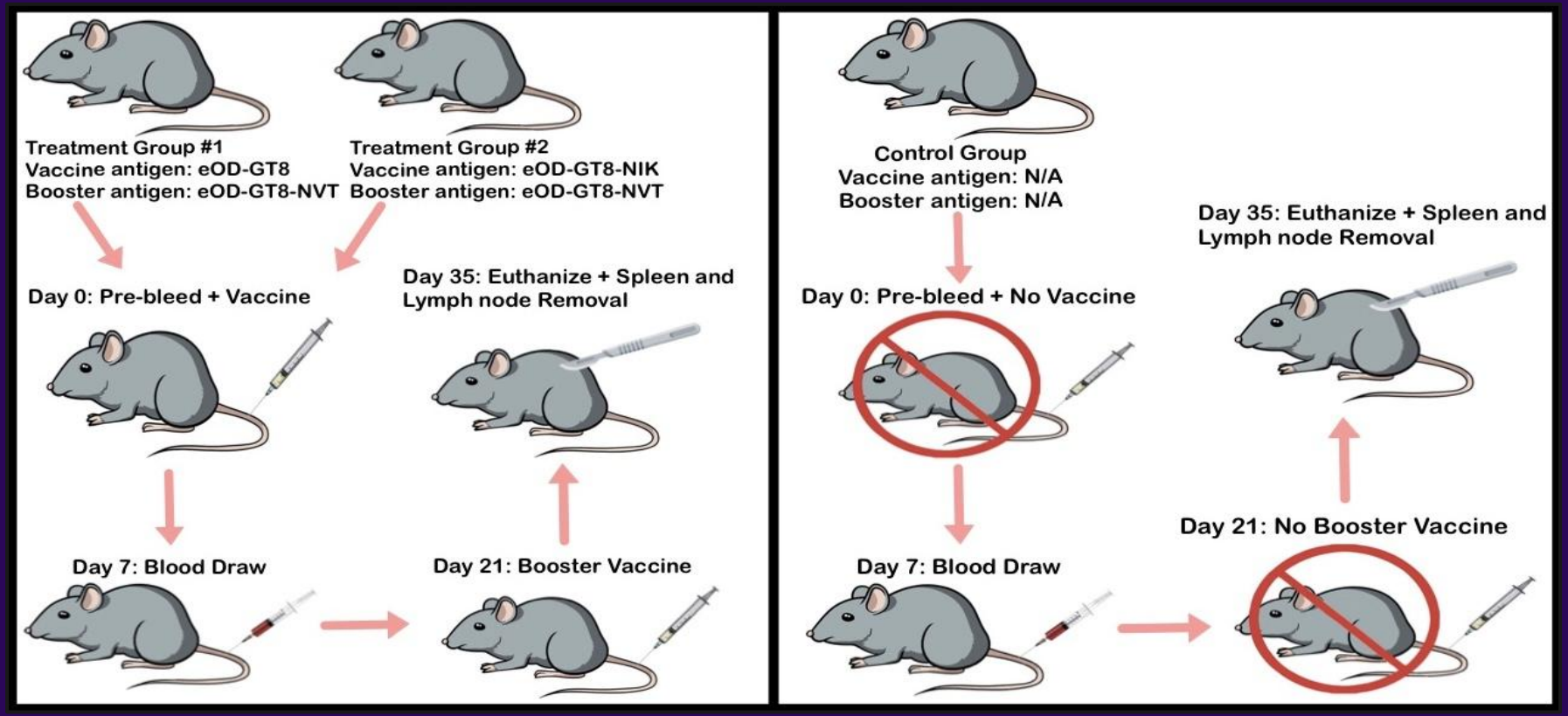
A Remaining Challenge

- The 276N glycan blocks the binding of VRC01-Class bnAbs
- Immunogens are designed without the 276N glycan
- Boosters must guide evolution to accommodate this glycan

N-linked ASN glycosylation

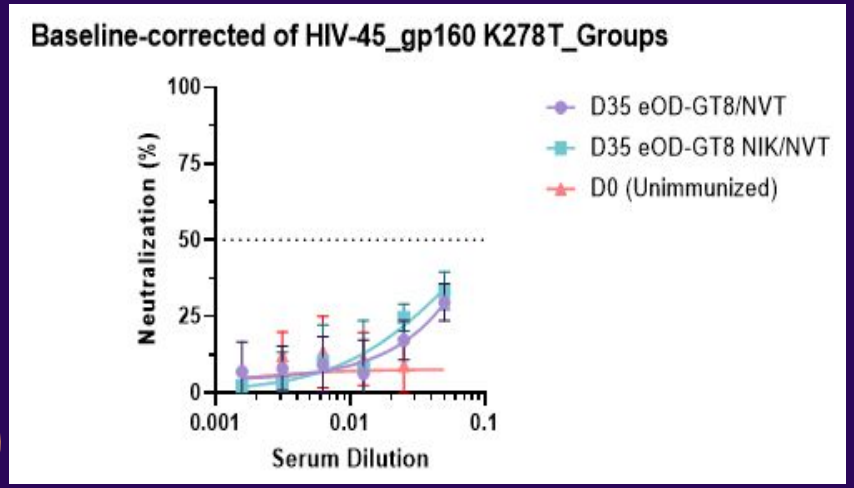


Experimental Timeline & Goals

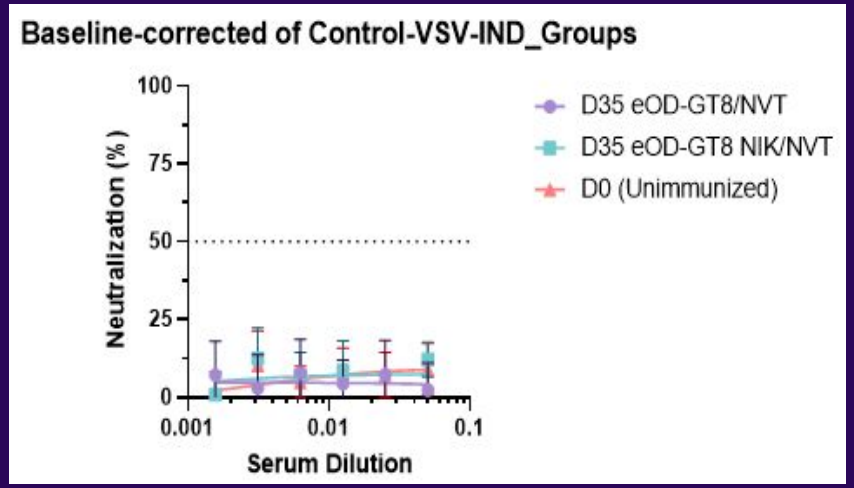


Neutralization Results

Treatment Group



Control Group



Sequence Data

- Conducted a single cell sort of memory B-cells of the immunized mice using flow cytometry
- Converted the mRNA to cDNA
- Amplified the variable heavy chain and variable kappa light chain

Next Steps

- Compare sequences of the elicited antibodies to those of VRC01-Class bnAbs
- Analyze the sequences for mutations
- Conduct a neutralization assays on the antibodies elicited