

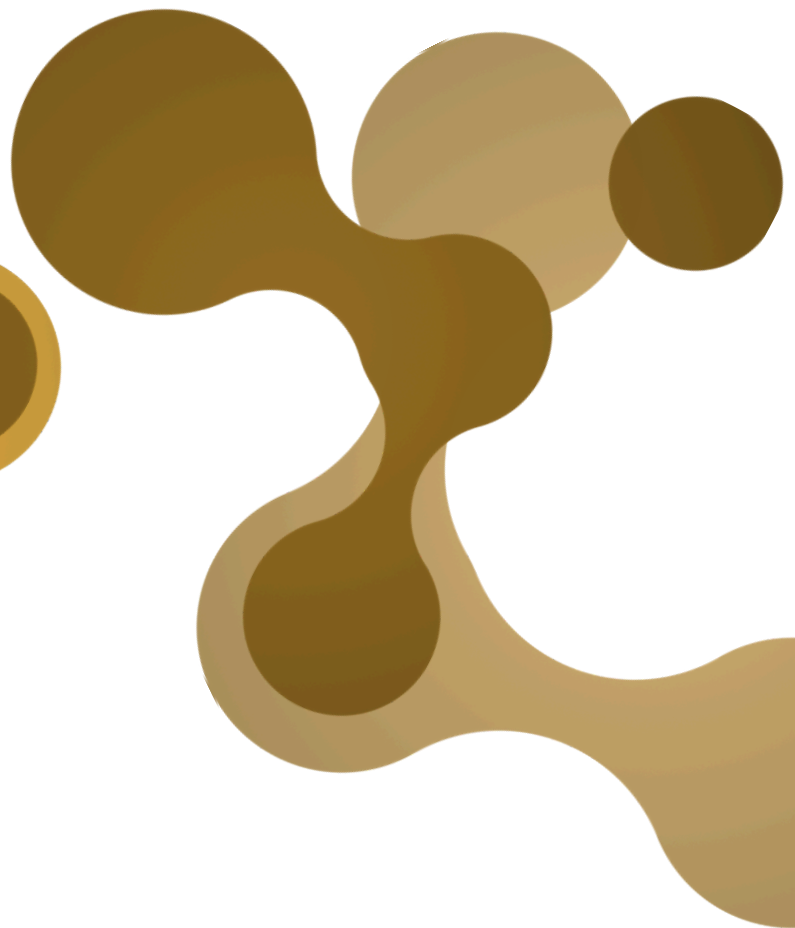
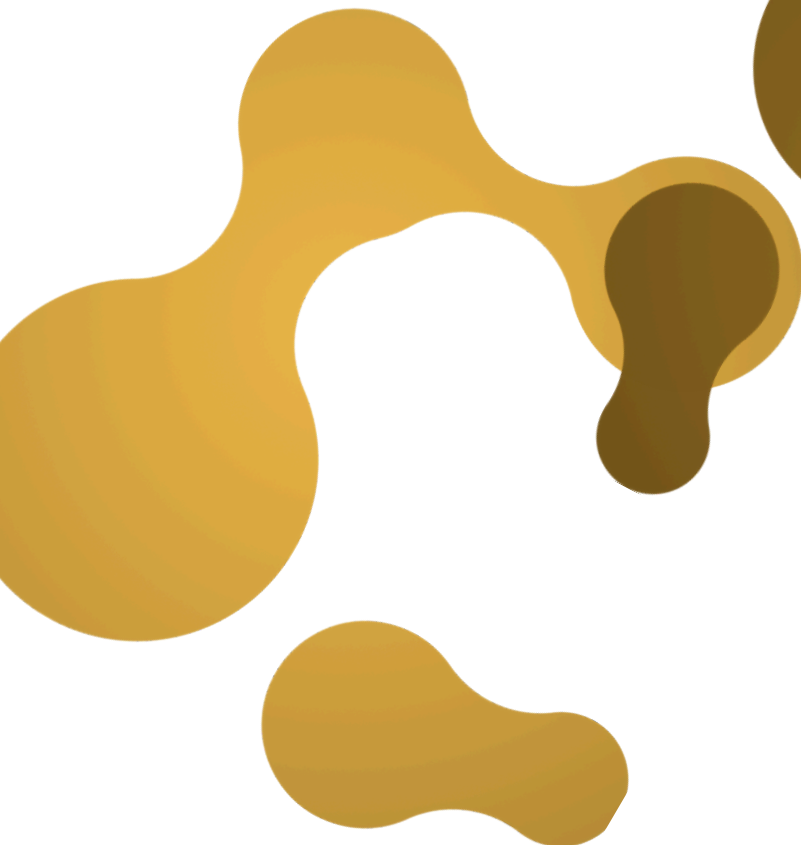


VANDERBILT
Center for Technology Transfer
and Commercialization



**Vanderbilt Center for
Antibody Therapeutics**

**ANTIBODY
PIPELINE**





About the Vanderbilt Center for Antibody Therapeutics

James E. Crowe, Jr., MD leads the Vanderbilt Center for Antibody Therapeutics, which has specialized expertise in isolating fully human, naturally occurring antibodies to human diseases.

These antibodies can be used as therapeutics, prophylactic therapeutics, for vaccine development or vaccine quality control reagents, or in diagnostics. Moreover, these naturally occurring antibodies serve as templates to be optimized and engineered for improved characteristics. The Vanderbilt Center for Antibody Therapeutics specializes in research related to biodefense and emerging infectious diseases.

Antibody Pipeline Key



Available for development of vaccines



Available for development of diagnostics



Available for development of therapeutics



FDA priority review voucher eligible disease

FILOVIRIDAE

Ebola (ebolavirus EBOV, BDBV)

- Targets: GP
- Portfolio of specific and cross-reactive filovirus antibodies



Marburg (marburgvirus MARV)

- Targets: GP
- Portfolio of specific and cross-reactive filovirus antibodies



“Pan-Ebola” (for Ebola, Sudan, and Bundibugyo viruses)

- Targets: intact or receptor binding-competent GP
- Neutralizes a diverse set of ebolaviruses



PLASMODIUM

Malaria mAbs

- Targets: VAR2CSA



FLAVIVIRIDAE

Dengue Virus (flavivirus DENV)

- Targets: virion, E, prM proteins
- Neutralizing antibodies specific to serotypes 1, 2, 3, and 4. Tools for vaccine design



Hepatitis C Virus (hepacivirus HCV)

- Targets: E1/2 proteins
- Broadly neutralizing antibodies recognize conserved epitope. Viral antigens for vaccines



Japanese Encephalitis Virus

(flavivirus JEV)

- Targets: E protein
- Neutralizing antibodies to multiple genotypes, including GIII



West Nile Virus (flavivirus WNV)

- Targets: E protein domain II



Zika Virus (flavivirus ZIKV)

- Targets: E, NS-1 proteins
- Collection of antibodies to different epitopes for vaccine characterization



HIV/HCV Dual-specific Antibodies

- Targets: Env



ORTHOMYXOVIRIDAE

Influenza (influenzavirus A and B)

Vx Dx Tx

- Targets: HA: Type A&B, H1, H2, H3, H3v, H5, H7, H17, H18
- Large collection includes antibodies cross-reactive to multiple HA subtypes, broad H3 antibodies and those specific to unusual variants

PNEUMOVIRIDAE

Respiratory Syncytial Virus (orthopneumovirus RSV)

Vx Dx Tx

- Targets: : F, pre-fusion F, antigenic site IV on pre- and post-fusion F, G proteins
- Neutralizing antibodies specific to the pre-fusion F protein may be particularly promising as therapeutics. Neutralizing antibodies cross-reactive to RSV and MPV available. Useful tools for rational vaccine design

Metapneumovirus (metapneumovirus HMPV)

Vx Dx
PRV ✓

- Targets: F, antigenic site IV on pre- and post-fusion F

TOGOVIRIDAE*

Chikungunya Virus (alphavirus CHIKV)

- Targets: E1/E2 proteins

Vx Dx

Ross River Virus (alphavirus RRV)

- Targets: E2 protein, A and/or B domains

Vx Dx Tx

Mayaro Virus (alphavirus RRV)

- Targets: E2 protein

*Cross-reactive antibodies to the above three alphavirus are available

Vx Dx Tx

Equine Encephalitic Viruses**

(EEEV, VEEV, and WEEV alphaviruses)

- Targets: E2 protein

**Cross-reactive antibodies to EEEV, VEEV, WEEV are available

Vx Dx Tx

RETROVIRIDAE

Design and Development of Empirical and Rational Epitope-Focused HIV-1 Vaccine Candidates

- Targets: ENV

Vx Dx Tx

OTHER RNA VIRUSES

Norovirus (norovirus GI and GII)

- Targets: Neutralizing
- Antibodies to both the GI and GII genogroups are available, block HBGA binding

Vx Dx Tx

Rift Valley Fever Virus (phlebovirus RVF)

- Neutralizing, Gc or Gn protein

Vx Dx Tx

Enterovirus D68 (enterovirus EV-D68)

Vx Dx Tx

PARAMYXOVIRIDAE

Hendra and Nipah Viruses

(henipaviruses HeV and NiV, respectively)

- Targets: HeV glycoprotein

Vx Dx Tx

HPIV3 Neutralizing Antibodies

- Targets: F

Vx Dx Tx

DNA VIRUSES

Poxvirus (monkey pox, small cow pox, variola, vaccinia)

- Targets: Neutralizing, multiple virus surface proteins
- Cross-neutralizing antibodies, antibody combinations protective post-exposure in animal models

Vx

Dx

Tx

CORONAVIRIDAE

Pediatric mAbs

- Targets: All tested (tested up to XBB.1.5)
- Some neutralize both SARS2 and SARS1

Vx

Dx

Tx

Cross-reactive COVID-19

(SARS-CoV-1 derived) Antibodies (SET 1)

- Targets: SARS2 index, SARS1
- Non-neutralizing antibodies with Fc effector functions

Vx

Dx

Tx

SARS-CoV-2 Antibodies

- Targets: Varying; some XBB.1.5
- Some neutralize both SARS2 and SARS1

Vx

Dx

Tx

BACTERIA

Erlichia chafeensis

- Targets: Multiple

Vx Dx Tx

Staphylococcus aureus

- Targets: Toxin Luk A/B, Isd proteins
- Antibodies may be useful for sepsis

Vx Dx Tx

MISCELLANEOUS

Therapeutic Antibodies for Treating Lung Cancer (Oncologic)

- Targets: VEGF

Vx Dx Tx

C. Difficile mAbs (C. Difficile)

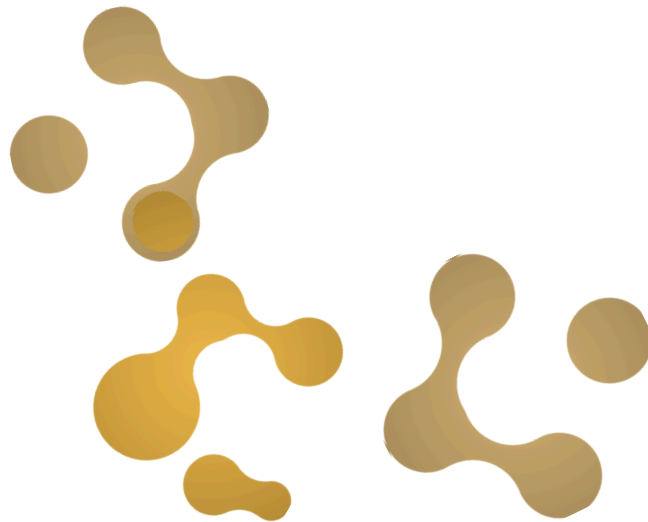
- Targets: Multiple antigens from C. Diff

Vx Dx Tx

Norovirus mAbs (Caliciviridae)

- Targets: P

Vx Dx Tx



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