

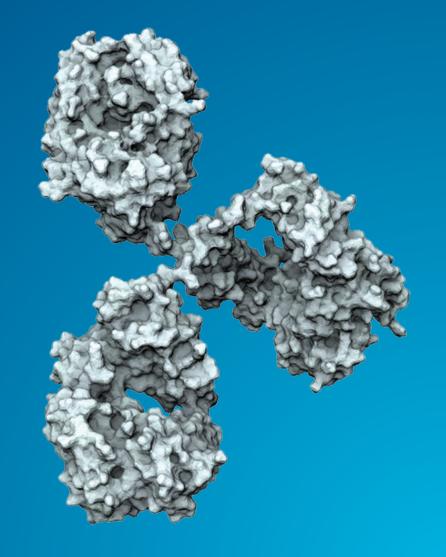
## Translating **science** into **global** health impact

## bnAbs for HIV prevention

Shelly Malhotra

NURHT Caucus Webinar

May 9, 2022



IAVI gratefully acknowledges the generous support provided by the following major funders



































Biomedical Advanced Research and Development Authority (BARDA) | Foundation for the National Institutes of Health | National Institute of Allergy and Infectious Diseases | amfAR, The Foundation for AIDS Research | Broadway Cares/Equity Fights AIDS | Cancer Research UK |
The City of New York, Economic Development Corporation | Congressionally Directed Medical Research Program (DoD) | GSK |
The Hearst Foundations | Keith Haring Foundation | Merck & Co., Inc., Kenilworth, NJ, USA (known as MSD outside the USA and Canada)

And many other generous individuals and partners around the world



## **Contents**

The burden of HIV

The case for bnAbs

**Global Access** 

#### HIV



#### **An Unmet Need**

- The HIV pandemic continues to cause extensive morbidity and mortality globally and is a top public health priority
- Despite progress in reaching 73% of people living with HIV with antiretroviral therapy, gaps in HIV prevention and treatment contributed to 1.5 million new infections and 680,000 HIV-related deaths in 2020
- Adolescent girls and young women (AGYW) in low- and middle-income countries (LMICs), especially in sub-Saharan Africa (sSA) remain disproportionately affected
- Young children accounted for 150,000 new HIV infections, the vast majority during infancy

#### **HIV Prevention Toolbox**

### A single product or approach will not stop the pandemic

STI TREATMENT	MEDICAL MALE CIRCUMCISION	HIV TESTING AND COUNSELING	MICROBICIDES
TREATMENT/ PREVENTION OF DRUG/ ALCOHOL ABUSE	HIV Prevention Toolbox		PrEP
CLEAN SYRINGES			PREVENTION OF VERTICAL TRANSMISSION
EDUCATION/ BEHAVIOR MODIFICATION	BLOOD SUPPLY SCREENING	TREATMENT AS PREVENTION	CONDOMS

We need a diversity of prevention options and programs to address the diverse needs of individuals at risk for HIV infection

#### **HIV** bnAbs for prevention (and treatment)

# CASE FOR ADDING ENHANCED BNABS TO PREVENTION TOOLBOX

STI TREATMENT	MEDICAL MALE CIRCUMCISION	HIV TESTING AND COUNSELING	MICROBICIDES
TREATMENT/ PREVENTION OF DRUG/ ALCOHOL ABUSE	HIV Prevention Toolbox		Oral PrEP
CLEAN SYRINGES			BROADLY NEUTRALIZING ANTIBODIES
EDUCATION/ BEHAVIOR MODIFICATION	BLOOD SUPPLY SCREENING	PREVENTION OF VERTICAL TRANSMISSION	CONDOMS

We need a diversity of prevention options and programs to address the diverse needs of individuals at risk for HIV infection

#### **LONG-ACTING**

Reduced frequency of administration

#### **MECHANISM OF PROTECTION**

- AMP trials provided a proof of concept for use of bnAbs for prevention of HIV
- Protection at the site of infection
- Elimination of infected cells distally from the site of infection

#### **LOW TOXICITY**

 Very few cases of adverse side effects, generally welltolerated

#### DISCREET

 Subcutaneous delivery every 3 to 4 months for next generation ebNAbs

### Potential role of ebnAbs to prevent vertical transmission

- Favorable potential dosing schedules
- Lower COGS for the pediatric indication
- Cost effectiveness; bNAbs for infant prophylaxis would offer good value in various sub-Saharan African settings and implementation scenarios (Alba, et al. forthcoming)
- Potential to align with schedule for routine pediatric vaccines
- Plan is to initiate a Phase 1 in Q1 2023, followed by initiating the Pediatric Program in sub-Saharan Africa
  once an adult dosing schedule (2024)
- Access work to define a use case, potential demand, acceptability, & implementation strategies for infant indication is underway

# Approach for global access to HIV bnAbs

Defining a pathway to global access

- Stakeholder-informed target product profile (PPC)
- Ensuring end user acceptability & feasibility
- Determining cost effectiveness
- Demand forecasting and generation
- Defining access pathways
- Integration into policy, financing & procurement platforms
- Advocacy to generate political will

- Evaluating platforms to reduce manufacturing COGs
- Formulation studies to enable SQ injections
- Low cost regional manufacturer

Affordable and accessible bnAbs for prevention

Low-cost

manufacturing

and formulation

Highly potent bnAbs w/ extended half-life

- Discovery of highly potent HIV bnAbs
- Optimization of existing HIV bnAbs for enhanced potency
- Optimization of bnAbs for extended half-life

# IAVI has Created a Public-Private Partnership to Advance an HIV bnAb Prevention Product and Collectively Map Out a Pathway to Global Access







#### USAID-PEPFAR and IAVI Strategic Partnership

- ✓ Engagement with high-risk populations
- ✓ Sustainable research capacity
- ✓ Antibody R&D for HIV prevention in African/global communities



#### IAVI-NIAID (VRC/DAIDS) Memorandum of Understanding

- ✓ Selection and advancement of antibody and antibody combinations for HIV
- ✓ Development experience



# IAVI-Serum Institute Collaboration Agreement

- ✓ Low-cost and high-volume manufacturing process for antibodies
- ✓ Distribution and access channels in LMIC



#### Expanding Access to Monoclonal Antibodies: A Global Call to Action

✓ Engagement to analyze gaps in global access to antibodies and enable innovative solutions



# HIV antibody guidance documents

 ✓ Collaboration on Preferred product characteristics (PPC), Vaccine Value Profile

## **Summary**



- The HIV pandemic continues to cause extensive morbidity and mortality globally and is a top public health priority
- There is a good case for adding long acting and potent bnAbs to the HIV prevention toolkit
- Alongside our product development, activities to enable broad access to bnAbs post-licensure are ongoing and include plans for prevention of vertical transmission and use by pregnant women

IAVI gratefully acknowledges the generous support provided by the following major funders



































Biomedical Advanced Research and Development Authority (BARDA) | Foundation for the National Institutes of Health | National Institute of Allergy and Infectious Diseases | amfAR, The Foundation for AIDS Research | Broadway Cares/Equity Fights AIDS | Cancer Research UK |
The City of New York, Economic Development Corporation | Congressionally Directed Medical Research Program (DoD) | GSK |
The Hearst Foundations | Keith Haring Foundation | Merck & Co., Inc., Kenilworth, NJ, USA (known as MSD outside the USA and Canada)

And many other generous individuals and partners around the world