

**AUTHORS:**

Linda-Gail Bekker^{1,2} 
 Glenda E. Gray^{3,4} 

AFFILIATIONS:

¹The Desmond Tutu HIV Centre, University of Cape Town, Cape Town, South Africa

²The Institute of Infectious Disease and Molecular Medicine, University of Cape Town, Cape Town, South Africa

³Infectious Disease and Oncology Research Institute, University of the Witwatersrand, Johannesburg, South Africa

⁴South African Medical Research Council, Cape Town, South Africa

CORRESPONDENCE TO:

Linda-Gail Bekker

EMAIL:

linda-gail.bekker@hiv-research.org.za

HOW TO CITE:

Bekker L-G, Gray GE. The BRILLIANT HIV Vaccine Consortium: Unfunded but not undone. *S Afr J Sci*. 2025;121(5/6), Art. #21985. <https://doi.org/10.17159/sajs.2025/21985>

ARTICLE INCLUDES:

- Peer review
- Supplementary material

KEYWORDS:

HIV vaccine, Africa, clinical and laboratory research, discovery medicine

PUBLISHED:

29 May 2025



The BRILLIANT HIV Vaccine Consortium: Unfunded but not undone

Significance:

Whilst the global HIV epidemic can be brought under control through the deployment of antiretroviral-based treatment and prevention, elimination of HIV will require a safe, affordable and effective preventive vaccine. Africa bears the brunt of the HIV epidemic and can continue to play a significant and increasing role in the research and discovery of an African relevant HIV vaccine.

The BRILLIANT Consortium held their second whole group meeting of almost 70 clinical scientists, vaccinologists, immunologists and community advocates in Tanzania in February 2025. They celebrated the progress and achievements of the first year of their cooperative agreement with USAID together with leading international scientists in the specifically appointed scientific advisory group. Two days later, along with almost every USAID cooperative agreement worldwide, the consortium received a Stop Work Order, and one month after that, a final termination of their 5-year agreement, days short of commencing their first novel and entirely African-led HIV vaccine discovery medicine trial known as B001.

USAID funded the BRILLIANT Consortium, commencing in September 2023 following a highly competitive but also collaborative process with USAID programme officers, technical support and scientists in response to a call for proposals with the overall objective of developing and evaluating novel HIV vaccine candidates emanating from the African continent. The BRILLIANT (Bringing Innovation to cLinical and Laboratory research to end HIV in Africa through new vaccine Technology) Consortium is a multidisciplinary collaboration led by ourselves (from South Africa), together with Cissy Kityo and Betty Mwesigwa (from Uganda) and hosted at the South African Medical Research Council (SAMRC), with partners and collaborators from Kenya, Mozambique, Nigeria, South Africa, Tanzania, Uganda, Zambia and Zimbabwe.

The BRILLIANT Consortium's mission is to conduct preclinical and clinical research that prioritises locally relevant HIV vaccine candidates to compliment and not duplicate international vaccine efforts in the high HIV incidence settings in sub-Saharan Africa. The vaccine development path of the BRILLIANT Consortium has five main objectives: (1) immunogen discovery utilising well-characterised envelopes derived from people living with HIV who had developed bNAbs; (2) vaccine platform and immunogen optimisation with tech-transfer activities; (3) clinical development pathways for first-generation immunogens; (4) community partnerships, advocacy and engagement around HIV vaccine discovery research and (5) collaboration with manufacturers to develop clinical-grade material and tech-transfer of promising candidates back to African manufacturers for further development should they show promise.

To date, almost all vaccine clinical trials have been conducted in southern and East Africa, and the BRILLIANT Consortium sought to expand into West Africa, with Nigerian investigators and institutions, with the view to starting trials there. While the expertise to conduct HIV vaccine discovery trials exists across Africa, continued investment in establishing, upgrading and modernising the clinical and pharmacy infrastructure is required. Strengthening the clinical infrastructure includes ensuring a secure energy supply (e.g. by providing generators and solar energy systems), reliable data and Internet connectivity, and well-managed pharmacies capable of safeguarding the integrity of investigational products. Conducting more complex clinical trials will also support, sustain, and energise the laboratory infrastructure and expertise in Africa. For early-phase clinical research, further investment is required to enable the diverse tissue sampling required for sophisticated immunogenicity evaluation, including mucosal sampling, leukapheresis and lymph node biopsies.

Given the magnitude of the HIV burden in Africa, with largely undescribed but unique viral and host diversity, it is critical that HIV vaccine discovery continues to include and expand the underutilised scientific expertise and capacity on the African continent. An effective and affordable HIV vaccine is necessary for the elimination of HIV, particularly in Africa. Several key challenges hamper Africa's vaccine research and production capabilities, including inadequate funding for African-led research, equipment and infrastructure challenges, lack of preclinical evaluation capacity, limited manufacturing facilities for clinical-grade vaccines, and a shortage of scientists with specialised laboratory, bioinformatics and biostatistics training. The recent foreign AID funding freezes, elimination of the US National Institutes of Health grants and general assaults on vaccine-related science have recently increased these challenges.

Despite the loss of the USD45 million agreement (the largest ever awarded to the SAMRC) over 5 years, the BRILLIANT Consortium continues to explore and find ways to move their research plans forward. They have mapped out three distinct clinical research and development pathways, each with a discovery medicine clinical trial associated (B001-3). All are designed to investigate whether the human immune system can be 'coaxed' using three sets of novel immunogens to target specific HIV antigens that move B-cell precursors towards developing into the broadly neutralising antibodies now well recognised to be critical in a preventive HIV vaccine.

That there is talent and expertise to be more fully harnessed in Africa and a greater role for African scientists to play in global HIV scientific discovery is indisputable and necessary. There is an urgent need for African governments and local philanthropy to invest more in research and development, to ensure the next generation of African clinical and basic scientists and build expertise and infrastructure that will sustain and transform the research contribution from our continent. The BRILLIANT Consortium is a model of what can and must be done.