Communication and Marketing Department
Isebe loThungelwano neNtengiso
Kommunikasie en Bemarkingsdepartement

Private Bag X3, Rondebosch 7701, South Africa
Welgelegen House, Chapel Road Extension, Rosebank, Cape Town
Tel: +27 (0) 21 650 5427/5428/5674 Fax: +27 (0) 21 650 5628

www.uct.ac.za

EMBARGOED UNTIL 18 MARCH 2026 AT 17:00 SAST (11 AM ET)

18 March 2026

UCT study pioneers microbiome-based treatment for bacterial vaginosis

A collaborative study by researchers from the University of Cape Town's (UCT) Department of Pathology and researchers from several institutions in South Africa and the United States has evaluated a novel microbiome-based approach for the treatment of bacterial vaginosis (BV) in women.

Central to this work was the isolation and characterisation of vaginal bacterial strains from South African women by collaborating research teams, including UCT researchers Dr Brian Kullin, Ms Anika Chicken, Dr Anna Happel, Prof Heather Jaspan and Professor Jo-Ann Passmore from UCT's Department of Pathology. The UCT team contributed more than 20 potential *Lactobacillus crispatus* strains to develop two multi-strain live biotherapeutic candidates designed to restore a protective vaginal microbiome.

Published in the scientific journal *Cell Host & Microbe*, the aim of the VIBRANT (Vaginal lIve Biotherapeutic RANdomized Trial) study was to test a new approach to BV treatment using beneficial vaginal bacteria as a live biotherapeutic product. These candidates contain multiple strains of *Lactobacillus crispatus*, a bacterium commonly found in healthy vaginal microbiomes.

BV is one of the most common conditions affecting women. It occurs when the healthy bacteria that normally protect the vagina are replaced by other microbes. BV is associated with significant genital inflammation, which can increase a woman's risk of acquiring sexually transmitted infections, including HIV. It is also linked to adverse pregnancy outcomes.

Although antibiotics can treat BV in the short term, the condition frequently returns because the protective bacteria that maintain a healthy vaginal environment often fail to recover after treatment.

"This study shows how microbiome science can move beyond antibiotics to harness beneficial bacteria themselves as medicine – opening the door to a new generation of treatments that restore women's reproductive health by rebuilding the natural microbial

ecosystems that protect it," said Professor Jo-Ann Passmore from the Division of Medical Virology at UCT's Department of Pathology.

In this early clinical trial co-led by Dr Caroline Mitchell from Mass Gen Hospital (MGH) in the United States and Dr Disebo Potloane from CAPRISA in South Africa, the live bacterial products were safe, well tolerated and successfully colonised the vagina in many participants.

In some women, the beneficial bacteria remained detectable several months later, suggesting that this approach could help restore a healthy vaginal microbiome and reduce BV recurrence.

Passmore said for many years their research has focused on the vaginal microbiome and genital inflammation in women, particularly in African populations where BV is extremely common and is linked to increased risk of HIV and other reproductive health complications. BV affects around one in three women globally.

"One of the challenges with BV is that current treatments rely almost entirely on antibiotics, which do not address the underlying problem – the loss of protective bacteria. That is why microbiome-based therapies are so exciting. They aim to restore the natural microbial balance of the vagina, rather than simply eliminating bacteria," she said.

"We were particularly interested in contributing bacterial isolates from women in Cape Town, because microbiome therapies should be developed using strains that reflect the diversity of women globally, not only those from Europe or North America," said Passmore.

Passmore said by contributing bacterial isolates from African women whose vaginal microbiomes were naturally dominated by *L. crispatus*, the researchers hoped to help identify strains that could be used to develop live biotherapeutic products capable of establishing stable colonisation in the vagina.

"Ultimately, the aim is to develop treatments that help women rebuild a protective vaginal microbiome, reducing recurrence of BV and improving reproductive health," she said.

This research helps in identifying new treatment strategies that work with the body's natural microbial ecosystem rather than relying solely on antibiotics.

"An important aspect of this project is that it reflects true international collaboration in microbiome science. The live biotherapeutic products tested in the study were developed using *L. crispatus* strains isolated from women in both the United States and South Africa, thereby reflecting the diversity of vaginal microbiomes across populations.

"Ensuring that African populations are represented in microbiome research is essential if we want to develop effective therapies that benefit women everywhere," said Passmore.

This research was supported by funding from the Gates Foundation. The findings and conclusions described are those of the authors and do not necessarily reflect the positions or policies of the foundation.

Ends

Issued by: UCT Communication and Marketing Department

Thami Nkwanyane
Media Liaison and Monitoring Officer
Communication and Marketing Department
University of Cape Town
Rondebosch
Tel: (021) 650 5672
Cell: (072) 563 9500
Email: thami.nkwanyane@uct.ac.za
Website: www.uct.ac.za