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Vyome is involved in the development of next generation antibiotics and antifungal agents that target antimicrobial resistance for opportunist pathogens of the skin.

The results, in the form of three important studies, describing its DART (Dual Action Rational Therapeutics) antibiotics and clinical results from its antifungal Molecular Replacement Therapy (MRT) technology platform, were presented at the American Society of Microbiology Interscience Conference of Antimicrobial Agents and Chemotherapy (ASM - ICAAC) in San Diego, California, USA.

In the first study, Vyome scientists characterized the skin microbiome of acne patients where the study showed the presence of antibiotic-resistant bacteria Propionibacterium acne and Staphylococcus epidermidis in the acne lesions.

The study identified the mutations that lead to resistance against the currently used antibiotics, and highlights the need to personalize acne treatment by selecting the right antibiotic to kill the bacteria.

Vyome has its lead program VB1953, a novel drug targeting antibiotics resistant acne market of USD 3 Bn, for which IND (Investigational New Drug) application will be filed with the USFDA in Q4 2015.

Vyome also presented data on a novel antibiotic based on its patented Dual Action Rational Therapeutics (DART) technology.

Compared with other antibiotics, like ciprofloxacin, DART antibiotics are unique in their ability to resist the development of resistance.

The new antibiotic exhibits potent activity against antibiotics-resistant Propionibacterium acne and other bacteria.

The scientists presented a mechanistic understanding of its unique action at the ASM-ICAAC.

"Vyome has a deep pipeline of DART molecules which are in pre-clinical stage. This is very interesting and creative science with far reaching benefits to address antibiotic resistance problem in the USD 50 BN antibiotic market," said Dr Raghunath Mashelkar, chairman, Vyome Biosciences.

Vyome has also developed a novel antifungal agent, Procaprycin, based on its Molecular Replacement Therapy (MRT) platform, which replaces an essential fatty acid in the fungus and causes membrane disruption.

Malassezia, a skin commensal fungus, is associated with several chronic diseases, including seborrheic dermatitis.

Vyome scientists have developed MRT platform technology with Procaprycin using the functional genomic information on Malassezia.

The study presented at the ASM-ICAAC meeting highlighted the mechanisms of action and recent clinical data on Procaprycin.

"Vyome has two clinically proven products to treat seborrheic dermatitis and dandruff. This is a very novel and effective platform for antifungals and Vyome is currently pursuing commercialization discussions with partners in India and in other countries for different partnership models," says N Venkat, co-founder & CEO, Vyome Biosciences.