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Indo-Spain project to develop new antibiotics against gram-negative bacteria

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To identify and optimise molecules that could be progressed to clinical studies within the next two years



Spain-based ABAC Therapeutics, together with the artificial intelligence (AI) company Peptris (based in Bengaluru), and the Foundation for Neglected Disease Research (FNDR), with scientific support from Medicines for Malaria Venture (MMV), is leading an international project to optimize a new chemical structure that has shown effectiveness against Gram-negative bacteria, the greatest current threat to public health.

In recent decades, there has been a significant increase in the incidence of infections caused by the Gram-negative bacteria known as “the four killers”: Acinetobacter baumannii, Pseudomonas aeruginosa, Escherichia coli and Klebsiella pneumoniae.

The two-year project will be developed in four stages. Artificial intelligence and in silico methods will be used to analyse the screening data, and propose new chemical series, which will then be optimised for both their antibacterial activity and their safety and tolerability.

ABAC has initially screened 145,000 compounds from MMV’s compound collection against a range of bacteria. Chemical series with a narrow spectrum of activity against bacterial pathogens of interest were identified, and these include a new chemotype with demonstrated activity against Gram-negative bacteria.