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Breakthrough antibiotic by Singapore shows promise against obstinate mycobacterial infections

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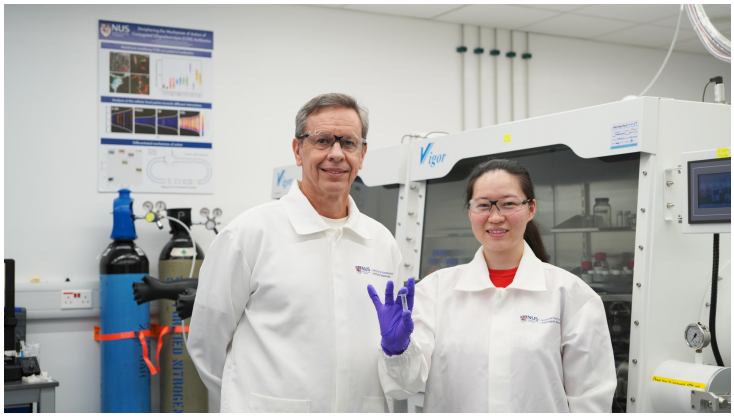
Offering a more effective therapeutic option against hard-to-treat mycobacterial lung diseases



Researchers from the Institute for Functional Intelligent Materials (I-FIM) at the National University of Singapore (NUS) have innovated a conjugated oligoelectrolyte (COE)-based compound that has the potential to turn the tide on the nontuberculous mycobacteria infections.

Called COE-PNH2, this novel agent not only demonstrates high efficacy against *Mycobacterium abscessus* (Mab), one of the most prevalent mycobacteria species, but also shows a blend of potency and safety that could reshape the treatment paradigm for persistent lung infections.

A class of antimicrobial compounds with a modular molecular framework, COEs can be engineered into a panoply of therapeutic agents to fight a broad spectrum of infections.

COE-PNH2, the molecule designed and crafted by the I-FIM researchers, is optimised to target Mab, employing a dual mechanism that disrupts the bacterial membrane and obstructs vital bioenergetic pathways, a one-two punch that leaves the bacteria with little room to hide. In particular, the molecule attacks both replicating and dormant forms of Mab, exhibiting robust bactericidal activity that leads to a more comprehensive eradication of the bacteria, leaving no refuge for resistance to crop up while reducing the likelihood of relapse.