

## BioTryp Therapeutics

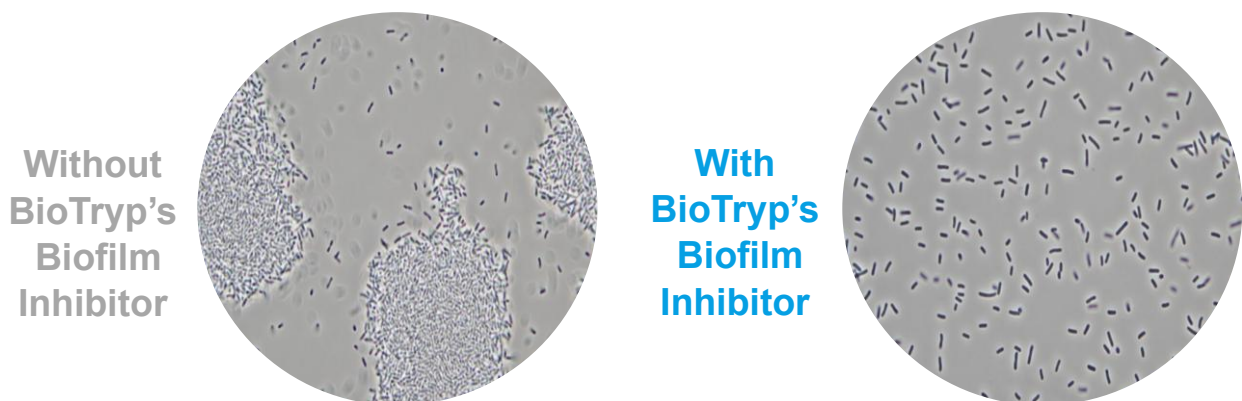
### Inhibiting Bacterial Biofilms to Potentiate Antibiotics and Prevent Recurrent Infections

Biofilm formation is a key aspect of the antibiotic resistance crisis, providing physical barrier against antibiotic treatment and the body's own defences. Biofilms occur in up to 80% of bacterial infections (e.g. urinary tract infections (UTIs), wound infections & respiratory infections) leading to treatment failure, complications, and recurrent infections. There is no antibiofilm drugs available clinically. Current treatment relies exclusively on antibiotics, which have poor antibiofilm activity leading to repeated and long-term use thereby increased resistance. BioTryp Therapeutics, an early-stage spin-off company from the University of Cambridge, aims to address this unmet clinical need by developing the first orally administered biofilm-inhibiting therapy for bacterial infections.

BioTryp's technology exploits small-molecule inhibitors of a key bacterial target that regulates biofilm formation. The target has no mammalian analogue and is conserved across 85+ bacterial species involved in 20+ infections, offering a pathway to develop selective biofilm inhibitors for multiple bacterial infections. BioTryp's first clinical application is UTIs, the most common bacterial infection worldwide, affecting 400 million people per year (50% of women and 10% of men in their lifetime).

BioTryp's innovation is based on extensive underlying research at the University of Cambridge funded by over £1M in research grants. Combining large-scale virtual screens with high-throughput assays, novel small-molecule inhibitors were identified, and their ADME-Tox and physicochemical properties suggest a path towards a TPP of orally administered therapy for UTIs and potentially other infections. The work involved molecular, biochemical, biophysical and computational techniques to optimise the biofilm inhibitors and initiate pre-clinical testing. Importantly, BioTryp's top compounds i) inhibit biofilm formation in a range of clinical isolates of uropathogenic *E. coli*, the main pathogen in UTIs responsible for up to 80% of infections, ii) exhibit no antibacterial activity (strictly biofilm inhibitors), and iii) applicable to multiple bacterial infection.

The aim is to develop effective biofilm inhibitors to be used (i) as an adjuvant, with existing antibiotics (antibiotic agnostic - not restricted to combining with a specific antibiotic), to enhance treatment outcome and reduce complications, and (ii) as an alternative to antibiotics for long-term post-recovery prophylaxis, thereby reducing antibiotic prescribing and preventing recurrent infections.



Visualisation of a 24-hour sample of uropathogenic *E. coli* isolate without (left) and with (right) a BioTryp's biofilm inhibitor, imaged under light microscopy