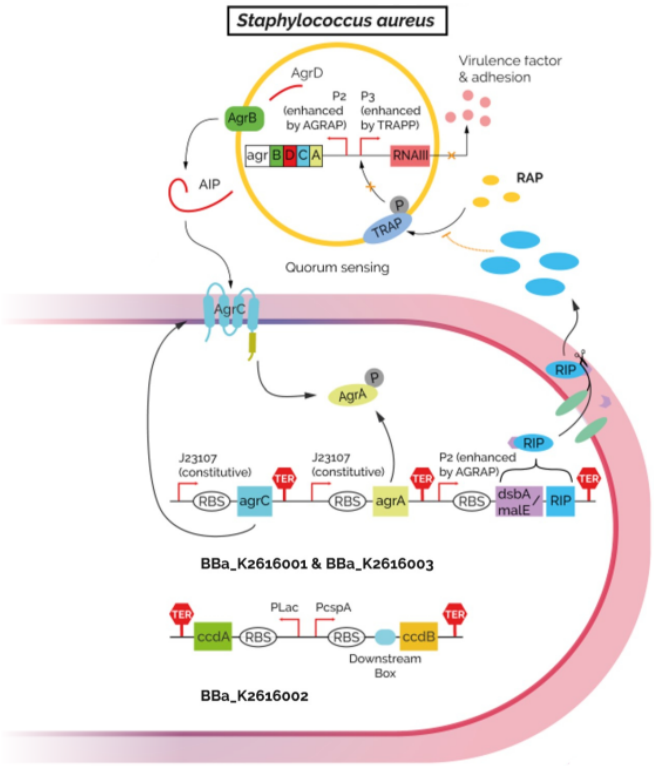
A



FIGHT INFECTIONS

Prevent *S. aureus* biofilm formation

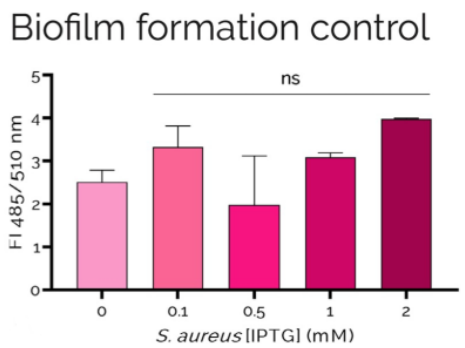
Our strategy is to concentrate our efforts on fighting against S. aureus, since it is the leading cause of infections. We decided to focus on preventing the formation of a biofilm by S. aureus, because it is the state in which pathogens develop resistance to both the immune system and to antibiotics. by disturbing the quorum sensing. Communication within a bacterial community relies on the production and detection of signal molecules, in a system called quorum sensing.

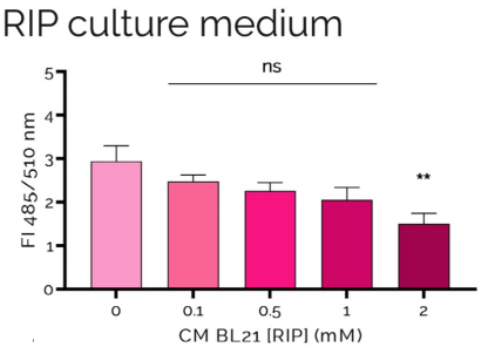
A : Designed RNAIII Inhibiting Peptide (RIP) secretion pathway. AgrC protein also present on *S. aureus* senses the auto-induced peptide (AIP) and stimulates production of RIP.

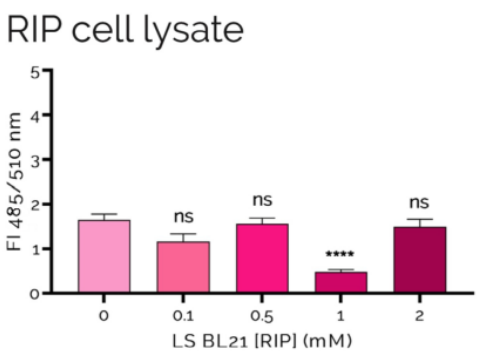
B : Measurement of the impact of RIP on biofilm formation of S. aureus. Crystal violet assay on biofilm formation for *S. aureus* alone with different [IPTG], with culture medium of our modified *E. coli* expressing RIP, S. aureus with cell lysate from the same bacteria. (n=8)

C : Measurement of the impact of RIP on S. aureus biofilm formation using different protocols. OD measured with our protocol and OD measured with iGEM WPI Worcester protocol shows high variability, common when dealing with biofilms

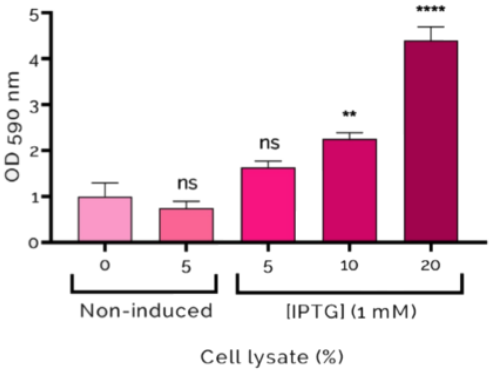
B

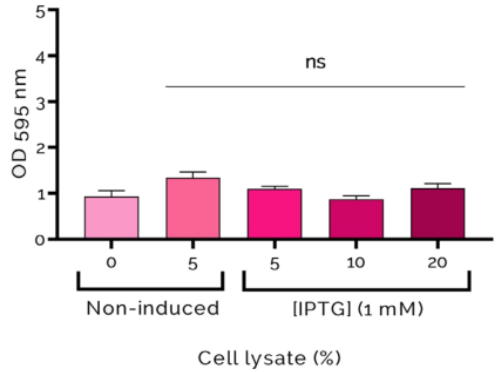






C





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