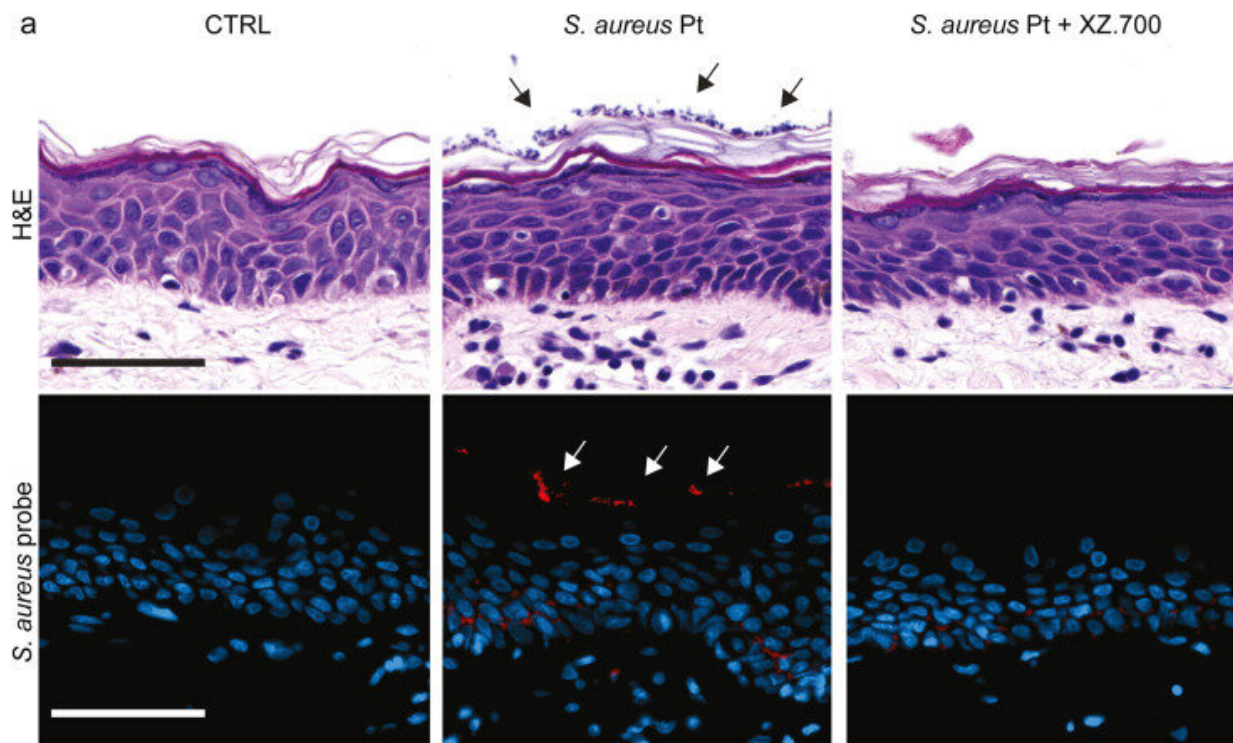


# Endolysins: A potential solution for treating the global problem of resistant *S. aureus*

March 17 2023



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Endolysin (XZ.700) inhibits ex vivo *S. aureus* colonization of healthy skin and kill established *S. aureus*. CTCL patient-derived *S. aureus* were grown to early log phase and seeded on healthy skin with or without recombinant endolysin (XZ.700). (a) Micrographs depict healthy human skin without addition of *S. aureus* (left), addition of *S. aureus* Pt without XZ.700 (middle) or with co-addition of XZ.700 (right) (1 $\mu$ g/mL). Adhering bacteria are indicated by arrowheads. Sections are stained with H&E (upper panel) or by FISH with a *S.*

aureus specific peptide nucleic acid (PNA) probe (lower panel). Scale bars represents 50  $\mu\text{m}$ . (b) Preventing *S. aureus* Pt skin colonization and killing of established *S. aureus* Pt on human skin by XZ.700. *S. aureus* Pt was seeded to the stratum corneum of healthy skin specimens and incubated for 2 hours, washed with PBS to remove non-adhering *S. aureus*, and incubated for an additional 2 hours prior to analysis of the CFU numbers by serial dilution. XZ.700 was added together with *S. aureus* Pt (XZ.700<sub>CO</sub>) at 1 $\mu\text{g}/\text{mL}$  or after the PBS wash in concentrations 1, 5, and 10  $\mu\text{g}/\text{mL}$  (XZ.700<sub>POST</sub>). Closed circles indicate number of CFU per biopsy (12.6  $\text{mm}^2$ ). Open circles indicated a CFU below detection level of 100 CFU/biopsy (n=4-5; whiskers show standard deviation). Ordinary one-way ANOVA with Dunnett's multiple comparisons test, \*\*\* significant at p

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