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Novel *Staphylococcal* phage endolysin, SAL-1

Gi-Mo Jung, Kim J W, Jun S Y, Yoon S J, Kang S H and Myung-Soo Kang
iNtRON Biotechnology, Korea

Statement of the Problem: A wide variety of bacteria can cause severe infections. Many of these bacteria are or have become resistant to many commonly used antibiotics. Infections due to drug-resistant bacteria require treatment with new types of antibiotics. Phage endolysins differ from standard-of-care antibiotics with regard to their potency, speed, specificity, and activity against antibiotic-resistant strains. Therefore, phage endolysins represent a promising research target for the discovery and development of novel antibacterial therapeutic agents.

Materials & Method: We developed phage endolysin SAL-1 using genetic information of staphylococcal bacteriophage SAP-1. For current and future clinical studies of SAL-1, we performed the development of its efficient production process and ELISA assay method, preformulation study and its characterization.

Findings: We established an efficient soluble production process for SAL-1 and ELISA assay method to be used in pharmacokinetic study. In addition, various characteristic of SAL-1 including pI, antibacterial activity were identified. Furthermore, appropriate formulation providing acceptable storage- and handling-stability was developed.

Conclusion: Essential prerequisite technologies for conducting clinical studies for SAL-1-containing drug candidate were developed. We anticipate that this presentation will provide incentives for developing phage endolysin-based antibacterial agents to combat other bacterial infections.

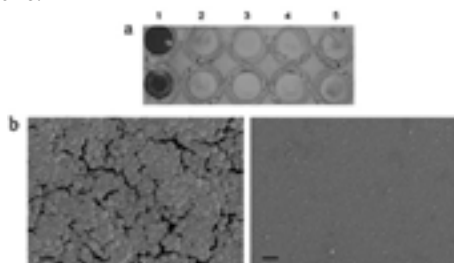


Fig. 1. Examination of the *Staphylococcus aureus* biofilm removal activity of SAL200. Biofilms of *S. aureus* SA1 were treated with SAL200 and biofilm removal was examined by (a) salkin staining and (b) scanning electron microscopy.

Biography

Gi-Mo Jung has earned his MS degree from Department of Biochemistry at Hoseo University, Korea. He is a Staff Scientist at Institute of iNtRON Biotechnology, working on Biocontrol for Antibiotics Resistance.

gimo00@intron.co.kr

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