A novel peptide derived from the mitochondrial protein, Romo1, exhibits the broad antimicrobial activity against the various multidrug-resistant bacteria *in vitro* and *in vivo*

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To overcome increasing bacterial resistance to conventional antibiotics, many antimicrobial peptides (AMPs) derived from host defense proteins have been developed. However, there are considerable obstacles to their application to systemic infections because of their low bioavailability. In the present study, we developed an peptide antibiotic that exhibits a broad spectrum of antimicrobial activity. This peptide showed remarkable efficacy against sepsis-causing bacteria, including multidrug-resistant strains, with low toxicity in a murine model of sepsis after intravenous administration. It seems that this peptide disrupts bacterial membranes by interacting with cardiolipin and lipid A. From the results of this study, we suggest that this peptide is a new class of agent for overcoming low efficacy in intravenous application of AMPs and as a promising candidate to overcome multidrug resistance.

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[2] D. You, H. Lee, H. Kim, G. Lee, YD. Yoo. Int J Mol Sci. **2021,** *22*, 8243.