Parasin I

Cat. No.:	HY-P0324
CAS No.:	219552-69-9
Molecular Formula:	$C_{82}H_{154}N_{34}O_{24}$
Molecular Weight:	2000.31
Sequence:	Lys-Gly-Arg-Gly-Lys-Gln-Gly-Gly-Lys-Val-Arg-Ala-Lys-Ala-Lys-Thr-Arg-Ser-Ser
Sequence Shortening:	KGRGKQGGKVRAKAKTRSS
Target:	Bacterial
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	Parasin I is a 19-amino acid histone H2A-derived peptide isolated from the skin of the catfish, and shows antimicrobial activity.
In Vitro	Parasin I with comparable antimicrobial activities localized to the cell membrane and subsequently permeabilized the outer and cytoplasmic membranes. Parasin I and its active analogs show strong cytoplasmic membrane permeabilizing activity[1]. Codon optimized parasin I fused with human lysozyme is expressed in Pichia pastoris, and has potent antibiotic activity[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]

The antimicrobial activity of each peptide is determined using the broth microdilution assay. Briefly, single colonies of bacteria and fungi are inoculated into 3% trypticase soy broth (TSB) and Saboraud's medium, respectively, and cultured overnight at 37 and 30°C, respectively. Aliquots of each culture are transferred to 50 mL of fresh medium and incubated for an additional 3-6 h to obtain midlogarithmic phase cells. The cells are then washed and resuspended in 10 mM sodium phosphate buffer (NAPB), pH 7.4. The relationship between absorbance at 620 nm and colony-forming units (cfus) is determined for each microorganism by spreading serial dilutions of the cell suspension onto TSB or Saboraud agar plates. The cell suspension is diluted to 5×10^5 cfu/mL with 10 mM NAPB. Each well of 96- well propylene microtiter plates is filled with 90 mL of the diluted suspension and 10 mL of serially diluted peptide samples. After incubation for 3 h, fresh medium is added to the mixture and incubated at 37°C (bacteria) or 30°C (fungi) for an additional 16 h. The inhibition of growth is determined by measuring absorbance at 620 nm with a Model 550 Microplate Reader. The lowest concentration of peptide that completely inhibits growth is defined as the 'minimal inhibitory concentration' (MIC). The MICs are the average values obtained in triplicates in three independent experiments.

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REFERENCES

[1]. Koo YS, et al. Structure-activity relations of parasin I, a histone H2A-derived antimicrobial peptide. Peptides. 2008 Jul;29(7):1102-8.

[2]. Zhao H, et al. Characterization of bioactive recombinant antimicrobial peptide parasin I fused with human lysozyme expressed in the yeast Pichia pastoris system. Enzyme Microb Technol. 2015 Sep;77:61-7.

Caution: Product has not been fully validated for medical applications. For research use only.

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