Product Data Sheet

Product Name: Parasin I
Cat. No.: GC32348

Chemical Properties

Cas. No.	219552-69-9		
SMILES	Lys-Gly-Arg-Gly-Lys-Gln-Gly-Gly-Lys-Val-Arg-Ala-Lys-Ala-Lys-Thr-Arg-Ser-Ser		
Formula	$C_{82}H_{154}N_{34}O_{24}$	M.Wt	2000.31
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Parasin I		

Protocol

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Cell experiment:

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 5×105 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.

Background

Parasin I is a 19-amino acid histone H2A-derived peptide isolated from the skin of the catfish, and shows antimicrobial activity.

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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].

[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.

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