LAH4

Cat. No.:	HY-P0311
CAS No.:	184776-51-0
Molecular Formula:	$C_{132}H_{228}N_{38}O_{27}$
Molecular Weight:	2779.53
Sequence:	Lys-Lys-Ala-Leu-Leu-Ala-Leu-Ala-Leu-His-His-Leu-Ala-His-Leu-Ala-Leu-His-Leu-Ala-Leu-Ala-Leu-Lys-Lys-Ala
Sequence Shortening:	KKALLALALHHLAHLALHLALALKKA
Target:	Bacterial
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	LAH4, an alpha-helix of the designed amphipathic peptide antibiotic, exhibits potent antimicrobial, nucleic acid transfection and cell penetration activities. LAH4 possesses high plasmid DNA delivery capacities. LAH4 has a strong affinity for anionic lipids found in the outer membrane of bacterial membranes[1][2][3].
In Vitro	LAH4 is capable of complexing DNA, associating with the cell surfacemembrane and then, when enveloped within an endosome, disrupts the endosomal membrane as the pH drops[1]. LAH4 possesses robust plasmid DNA transfection properties. Peptides of the LAH4 family are able to efficiently deliver siRNAs in vitro into a human cell line[2]. LAH4 is found to mediate the intracellular delivery of both protein and nucleotide cargo and facilitate protein internalization using mechanisms involving endosomal acidification and processing through the proteasome pathway, leading to enhanced cross presentation of protein antigen by dendritic cells to CD8+ T cells. LAH4 also improves the internalization of CpG, resulting in NF-kB activation, thus potentiating the adjuvant effect of CpG[3]. LAH4 exhibits antibiotic activities against Escherichia coli and Bacillus subtilis. the peptide does not, however, lyse human red blood cells at bacteriocidal concentrations. The antibiotic activities of LAH4 are 2 orders of magnitude more pronounced at pH 5 when compared with pH 7.5[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Mason AJ, et al. The antibiotic and DNA-transfecting peptide LAH4 selectively associates with, and disorders, anionic lipids in mixed membranes. FASEB J. 2006;20(2):320-322.

[2]. Langlet-Bertin B, et al. Design and evaluation of histidine-rich amphipathic peptides for siRNA delivery. Pharm Res. 2010;27(7):1426-1436.

[3]. Zhang TT, et al. LAH4 enhances CD8+ T cell immunity of protein/peptide-based vaccines. Vaccine. 2012;30(4):784-793.

[4]. Vogt TC, et al. The interactions of histidine-containing amphipathic helical peptide antibiotics with lipid bilayers. The effects of charges and pH. J Biol Chem. 1999;274(41):29115-29121.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA