
Product Data Sheet

Product Name: LAH4 TFA

Cat. No.: GC62281

Chemical Properties

Cas. No.

Formula $C_{134}H_{229}F_3N_{38}O_{29}$

M.Wt 2893.55

Solubility Water : 100 mg/mL (34.56 mM; Need ultrasonic)

Storage -20°C, away from moisture

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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

Background

LAH4 TFA, an alpha-helix of the designed amphipathic peptide antibiotic, exhibits potent antimicrobial, nucleic acid transfection and cell penetration activities. LAH4 TFA possesses high plasmid DNA delivery capacities. LAH4 TFA has a strong affinity for anionic lipids found in the outer membrane of bacterial membranes[1][2][3].

LAH4 TFA 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 TFA 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 TFA 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 TFA also improves the internalization of CpG, resulting in NF-kB activation, thus potentiating the adjuvant effect of CpG[3]. LAH4 TFA 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 TFA are 2

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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orders of magnitude more pronounced at pH 5 when compared with pH 7.5[4].

[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.

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