
Product Data Sheet

Product Name: Defensin HNP-1 human

Cat. No.: GC64908

Chemical Properties

Cas. No. 99287-08-8

Formula C₁₅₀H₂₂₈N₄₄O₃₈S₆

M.Wt 3442.03

Solubility

Storage

Store at -20°C

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

Defensin HNP-1 is a peptide secreted by polymorphonuclear leukocytes (PMNs) that has antimicrobial properties.¹ It induces lysis of mammalian cells when used at concentrations of 25 and 100 µg/ml, respectively.² It also completely inhibits secretion of the exotoxin superantigen TSS toxin-1 (TSST-1) from *S. aureus* when used at a concentration of 50 ng/ml and inhibits anthrax lethal toxin (IC₅₀ = 148 nM).^{3,4} HNP-1 binds to recombinant HIV-1 envelope glycoprotein (gp120) and human CD4 (K_ds = 23.2 and 12.9 nM, respectively).⁵ It induces lysis and leakage from liposomes composed of dipalmitoyl phosphatidylcholine and dioleoyl phosphatidylserine (DOPS).⁶ *In vivo*, HNP-1 (5 µg) increases interferon α (IFN-α) production by human plasmacytoid dendritic cells (pDCs) injected into nude mice.⁷

1. Lehrer, R.I. Primate defensins *Nat. Rev. Microbiol.* 2(9)727-738(2004) 2. Lichtenstein, A., Ganz, T., Selsted, M.E., et al. *In vitro* tumor cell cytolysis mediated by peptide defensins of human and rabbit granulocytes *Blood* 68(6)1407-1410(1986) 3. Merriman, J.A., Nemeth, K.A., and Schlievert, P.M. Novel antimicrobial peptides that inhibit gram positive bacterial exotoxin synthesis *PLoS One* 9(4)(2014) 4. Wei, G., Pazgier, M., De Leeuw, E., et al. Trp-26 imparts functional versatility to human α-defensin HNP1 *J. Biol. Chem.* 285(21)16275-

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

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16285(2010) 5.Wang, W., Owen, S.M., Rudolph, D.L., et al.Activity of α - and θ -defensins against primary isolates of HIV-1J. Immunol.173(1)515-520(2004) 6.Fujii, G., Selsted, M.E., and Eisenberg, D.Defensins promote fusion and lysis of negatively charged membranesProtein Sci.2(8)1301-1312(1993) 7.Wang, F., Qiao, L., Lv, X., et al.Alarmin human α defensin HNP1 activates plasmacytoid dendritic cells by triggering NF- κ B and IRF1 signaling pathwaysCytokine8353-60(2016)

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