

β -Defensin-3 (human) trifluoroacetate salt

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Keep away from moisture

Storage:

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

Biological Description

Description	β -Defensin-3 (human) trifluoroacetate salt (hBD-3) is a key antimicrobial peptide in the human innate immune system, exhibiting broad-spectrum bactericidal, immunomodulatory, and tissue-repairing activities. β -Defensin-3 (human) trifluoroacetate salt can be used in the treatment of skin diseases and cancer, as well as in research on drug-resistant bacterial infections.
Targets(IC50)	Immunology/Inflammation related
In vitro	<p>Methods: Human dermal fibroblasts were treated with β-Defensin-3 (human) trifluoroacetate salt (10, 20 μg/mL) for 3–48 h, and FGF, PDGF, and VEGF levels were measured by ELISA.</p> <p>Results: β-Defensin-3 (human) trifluoroacetate salt (20 μg/mL) significantly increased the secretion of FGF, PDGF, and VEGF. [1]</p> <p>Methods: Rat intestinal epithelial cells (IEC-6) were pretreated with β-Defensin-3 (human) trifluoroacetate salt (5 μg/mL) for 12 hours, followed by treatment with rapamycin (200 nM) for 24 hours. Changes in autophagy-related proteins were detected by Western blot.</p> <p>Results: Pretreatment with β-Defensin-3 (human) trifluoroacetate salt reversed rapamycin-induced changes in autophagy-related proteins (decreased Beclin1 and LC3-II/I ratio, increased p62), and reduced autophagic flux and autophagosome formation. [2]</p>
In vivo	<p>Methods: To investigate the effect of β-Defensin-3 (human) trifluoroacetate salt on wound healing rate, a 6-mm full-thickness skin defect model was established on the backs of C57BL/6 mice. A 20-μL dose of 200 μg/mL β-Defensin-3 (human) trifluoroacetate salt was applied topically every 2 days for a total of 16 days.</p> <p>Results: In the β-Defensin-3 (human) trifluoroacetate salt group, wound healing was significantly accelerated starting on day 6, with complete healing observed by day 12. [1]</p>

Solubility Information

Solubility	H2O: 0.5 mg/mL, Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Reference

Takahashi M, et al. The Antimicrobial Peptide Human β -Defensin-3 Accelerates Wound Healing by Promoting Angiogenesis, Cell Migration, and Proliferation Through the FGFR/JAK2/STAT3 Signaling Pathway. *Front Immunol.* 2021;12:712781. Published 2021 Sep 14.

Chen L, et al. Human β -defensin-3 reduces excessive autophagy in intestinal epithelial cells and in experimental necrotizing enterocolitis. *Sci Rep.* 2019;9(1):19890. Published 2019 Dec 27.

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