

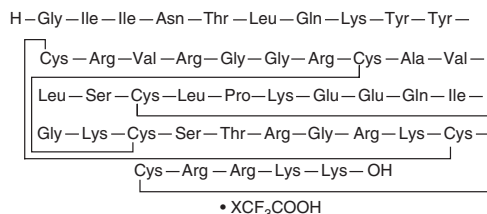
PRODUCT INFORMATION



β-Defensin-3 (human) (trifluoroacetate salt)

Item No. 24578

Synonyms: hBD-3
MF: C₂₁₆H₃₇₁N₇₅O₅₉S₆ • XCF₃COOH
FW: 5,155.1
Purity: ≥95%
Supplied as: A lyophilized powder
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

β-Defensin-3 (human) (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the β-defensin-3 (human) (trifluoroacetate salt) in water. The solubility of β-defensin-3 (human) (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

β-Defensin-3 is a peptide with antimicrobial properties that protects the skin and mucosal membranes of the respiratory, genitourinary, and gastrointestinal tracts.¹ It inhibits the growth of the periodontopathogenic and cariogenic bacteria *F. nucleatum*, *S. mutans*, *S. sobrinus*, *S. salivarius*, and *L. casei* (MICs = 12.5-100 mg/l).² It also inhibits the growth of *S. aureus*, *S. pyogenes*, *P. aeruginosa*, *E. coli*, and *C. albicans*.³ β-Defensin-3 stimulates gene expression and production of IL-6, IL-10, CXCL10, CCL2, MIP-3α, and RANTES by keratinocytes when used at a concentration of 30 μg/ml.⁴ It also stimulates calcium mobilization, migration, and proliferation of keratinocytes when used at concentrations of 30, 5, and 20 μg/ml, respectively. β-Defensin-3 induces IL-31 production by human peripheral blood-derived mast cells *in vitro* when used at a concentration of 10 μg/ml and by rat mast cells *in vivo* following a 500 ng intradermal dose.⁵

References

1. Lehrer, R.I. Primate defensins. *Nat. Rev. Microbiol.* **2**(9), 727-738 (2004).
2. Ouhara, K., Komatsuzawa, H., Yamada, S., et al. Susceptibilities of periodontopathogenic and cariogenic bacteria to antibacterial peptides, β-defensins and LL37, produced by human epithelial cells. *J. Antimicrob. Chemother.* **55**(6), 888-896 (2005).
3. Harder, J., Bartels, J., Christophers, E., et al. Isolation and characterization of human β-defensin-3, a novel human inducible peptide antibiotic. *J. Biol. Chem.* **276**(8), 5707-5713 (2001).
4. Niyonsaba, F., Ushio, H., Nakano, N., et al. Antimicrobial peptides human β-defensins stimulate epidermal keratinocyte migration, proliferation and production of proinflammatory cytokines and chemokines. *J. Invest. Dermatol.* **127**(3), 594-604 (2007).
5. Niyonsaba, F., Ushio, H., Hara, M., et al. Antimicrobial peptides human β-defensins and cathelicidin LL-37 induce the secretion of a pruritogenic cytokine IL-31 by human mast cells. *J. Immunol.* **184**(7), 3526-3534 (2010).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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