

PRODUCT INFORMATION

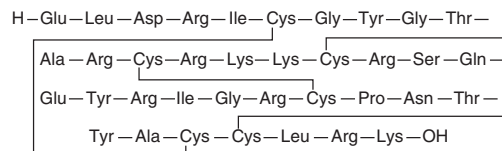


β -Defensin-4 (human) (trifluoroacetate salt)

Item No. 24579

CAS Registry No.: 370570-43-7

Formal Name: L- α -glutamyl-L-leucyl-L- α -aspartyl-L-arginyl-L-isoleucyl-L-cysteinylglycyl-L-tyrosylglycyl-L-threonyl-L-alanyl-L-arginyl-L-cysteinyl-L-arginyl-L-lysyl-L-lysyl-L-cysteinyl-L-arginyl-L-seryl-L-glutamyl-L- α -glutamyl-L-tyrosyl-L-arginyl-L-isoleucylglycyl-L-arginyl-L-cysteinyl-L-prolyl-L-asparaginyl-L-threonyl-L-tyrosyl-L-alanyl-L-cysteinyl-L-cysteinyl-L-leucyl-L-arginyl-L-lysine, cyclic (6 \rightarrow 33),(13 \rightarrow 27),(17 \rightarrow 34)-tris(disulfide), trifluoroacetate salt



• XCF₃COOH

Synonym: hBD-4 (human)

MF: C₁₈₀H₂₉₅N₆₃O₅₂S₆ • XCF₃COOH

FW: 4,366.1

Purity: \geq 95%

Supplied as: A lyophilized powder

Storage: -20°C

Stability: \geq 4 years

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

Laboratory Procedures

β -Defensin-4 (human) (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the β -defensin-4 (human) (trifluoroacetate salt) in water. The solubility of β -defensin-4 (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-4 is a peptide with antimicrobial properties that protects the skin and mucosal membranes of the respiratory, genitourinary, and gastrointestinal tracts.¹ It induces migration of monocytes *in vitro* when used at a concentration of 10 nM but does not affect migration of neutrophils and eosinophils.² β -Defensin-4 (30 μ g/ml) stimulates gene expression and production of IL-6, IL-10, CXCL10, CCL2, MIP-3 α , and RANTES by keratinocytes.³ It also stimulates calcium mobilization, migration, and proliferation of keratinocytes when used at concentrations of 30, 10, and 40 μ g/ml, respectively. β -Defensin-4 induces IL-31 production by human peripheral blood-derived mast cells *in vitro* when used at a concentration of 10 μ g/ml and by rat mast cells *in vivo* following a 500 ng intradermal dose.⁴ It also inhibits growth of *E. coli*, *P. aeruginosa*, and *S. aureus* with lethal concentration (LC) values of 5, 12, and 15 μ M, respectively, of *S. carnosus* (MIC = 4.5 μ g/ml), and of *C. albicans* with a minimum fungicidal concentration (MFC) value of 7.5 μ M.^{2,5}

References

1. Lehrer, R.I. *Nat. Rev. Microbiol.* **2**(9), 727-738 (2004).
2. Garca, J.R., Krause, A., Schulz, S., et al. *FASEB J.* **15**(10), 1819-1821 (2001).
3. Niyonsaba, F., Ushio, H., Nakano, N., et al. *J. Invest. Dermatol.* **127**(3), 594-604 (2007).
4. Niyonsaba, F., Ushio, H., Hara, M., et al. *J. Immunol.* **184**(7), 3526-3534 (2010).
5. Sharma, H. and Nagaraj, R. *Peptides* **38**(2), 255-265 (2012).

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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