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BD-2

Catalog # PVGS1061

Product Information

Primary Accession	O15263
Species	Human
Sequence	Gly24-Pro64
Purity	> 98% as analyzed by SDS-PAGE > 98% as analyzed by HPLC
Endotoxin Level	
Biological Activity	Fully biologically active when compared to standard. The biological activity determined by a chemotaxis bioassay using immature human dendritic cells is in a concentration range of 10.0-100.0 ng/ml.
Expression System	E. coli
Theoretical Molecular Weight	4.3 kDa
Formulation	Lyophilized from a 0.2 μm filtered solution in 20 mM PBS, pH 7.4, 130 mM NaCl.
Reconstitution	It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/ml.
Storage & Stability	Upon receiving, this product remains stable for up to 6 months at -70°C or -20°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. Avoid repeated freeze-thaw cycles.

Additional Information

Gene ID	100289462;1673
Other Names	Defensin beta 4A {ECO:0000312|HGNC:HGNC:2767}, Beta-defensin 2, BD-2, hBD-2, Defensin, beta 2, Skin-antimicrobial peptide 1, SAP1, DEFB4A, DEFB102, DEFB2, DEFB4
Target Background	Defensins (alpha and beta) are cationic peptides with a broad spectrum of antimicrobial activity that comprise an important arm of the innate immune system. The α-defensins are distinguished from the β-defensins by the pairing of their three disulfide bonds. To date, four human β-defensins have been identified; BD-1, BD-2, BD-3 and BD-4. β-defensins are expressed on some leukocytes and at epithelial surfaces. In addition to their direct antimicrobial activities, they are chemoattractant towards immature dendritic cells and memory T cells. The β-defensin proteins are expressed as the C-terminal

portion of precursors and are released by proteolytic cleavage of a signal sequence and, in the case of BD-1 (36 a.a.), a propeptide region. β-defensins contain a six-cysteine motif that forms three intra-molecular disulfide bonds. β-Defensins are 3-5 kDa peptides ranging in size from 33-47 amino acid residues.

Protein Information

Name	DEFB4A
Synonyms	DEFB102, DEFB2, DEFB4
Function	Exhibits antimicrobial activity against Gram-negative bacteria and Gram-positive bacteria, with highest activity against Gram-negative bacteria (PubMed:10837369, PubMed:9202117). Antimicrobial activity against P.aruginosa seems to be salt-sensitive and is reduced with high salt concentrations greater than 25 mM (PubMed:10837369). Also exhibits antimicrobial activity against the yeast C.albicans (PubMed:10837369, PubMed:30050988, PubMed:9202117). Permeabilizes C.albicans cell membranes via targeting plasma membrane lipid phosphatidylinositol 4,5-bisphosphate (PIP2), thereby leading to cell fragmentation and cell death (PubMed:30050988). Acts as a ligand for C- C chemokine receptor CCR6 (PubMed:10521347, PubMed:20068036). Binds to CCR6 and induces chemotactic activity of CCR6-expressing cells, such as immature dendritic cells and memory T cells (PubMed:10521347, PubMed:20068036).
Cellular Location	Secreted.
Tissue Location	Expressed in lung epithelial cells (at protein level) (PubMed:10837369). Expressed in foreskin, lung and trachea (PubMed:9202117). Lower expression in kidney, uterus and salivary gland tissue (PubMed:9202117). Expressed in epithelial cells of the respiratory tract, with higher expression in distal parenchyma of the lung, trachea, and tonsils, and lower expression in pharynx and adenoid, and low expression in tongue and larynx (PubMed:10837369, PubMed:9831658).