10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

BD-2
Catalog # PVGS1061

Specification

BD-2 - Product Information

Primary Accession O15263
Species
Human

Sequence
Gly24-Pro64

Purity
> 98% as analyzed by SDS-PAGE
> 98% as analyzed by HPLC

Endotoxin Level
< 1 EU/ µg of protein by LAL method

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.

BD-2 - 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.

BD-2 - 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).

BD-2 - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

BD-2 - Images