

Recombinant Human Defensin beta 3

Alternate names:	BD3, Beta-defensin 103, DEFB103, DEFB103A, DEFB103B, DEFB3, Defensin beta 103, Defensin-like protein, HBD3, HBP3
Catalog No.:	PA184X
Quantity:	20 µg
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 alpha-defensins are distinguished from the beta-defensins by the pairing of their three disulfide bonds. To date, four human beta-defensins have been identified; BD-1, BD-2, BD-3 and BD-4. Beta-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 Beta-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. Beta-defensins contain a six-cysteine motif that forms three intra-molecular disulfide bonds. Beta-Defensins are 3-5 kDa peptides ranging in size from 33-47 amino acid residues.
Uniprot ID:	P81534
NCBI:	NP_001075020.1
GeneID:	414325
Species:	Human
Source:	E. coli
Format:	State: Lyophilized (0.2µ Sterile filtered) purified protein Purity: >98% pure by SDS-PAGE and HPLC analyses Endotoxin Level: < 0.1 ng per µg of BD3 (1EU/µg) Reconstitution: Restore in 10 mM Acetic Acid to a concentration of 0.1-1.0 mg/ml. This solution can then be diluted into other aqueous buffers and stored at 2-8°C for 1 week or -20°C for future use.
Description:	Recombinant Human BD-3 is a 5.1 kDa protein containing 45 amino acid residues. AA Sequence: GIINTLQKYY CRVGGRCV LSLCPKEEQI GKCSTRGRKC CRRKK Biological Activity: Exhibits antimicrobial activity against gram-positive bacteria <i>S. aureus</i> and gram-negative <i>P. aeruginosa</i> and <i>E.coli</i> . Molecular weight: 5.1 kDa (45 aa)
Add. Information:	Centrifuge the vial prior to opening!

Storage:

Store lyophilized at 2-8°C for 6 months or at -20°C long term.
After reconstitution store the antibody undiluted at 2-8°C for one month
or (in aliquots) at -20°C long term.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Sørensen OE, Thapa DR, Roupé KM, Valore EV, Sjöbring U, Roberts AA, et al. Injury-induced innate immune response in human skin mediated by transactivation of the epidermal growth factor receptor. *J Clin Invest.* 2006 Jul;116(7):1878-85. Epub 2006 Jun 15. PubMed PMID: 16778986.
2. Binks MJ Attribution of the various inhibitory actions of the streptococcal inhibitor of complement (SIC) to regions within the molecule. *Journal of Biological Chemistry*, 2005, 280(20):20120-5.
3. Miller LS, Sørensen OE, Liu PT, Jalian HR, Eshtiaghpour D, Behmanesh BE, et al. TGF-alpha regulates TLR expression and function on epidermal keratinocytes. *J Immunol.* 2005 May 15;174(10):6137-43. PubMed PMID: 15879109.
4. Starner TD, Agerberth B, Gudmundsson GH, McCray PB. Expression and activity of beta-defensins and LL-37 in the developing human lung. *J Immunol.* 2005 Feb 1;174(3):1608-15. PubMed PMID: 15661923.
5. Sørensen OE, Cowland JB, Theilgaard-Mönch K, Liu L, Ganz T, Borregaard N. Wound healing and expression of antimicrobial peptides/polypeptides in human keratinocytes, a consequence of common growth factors. *J Immunol.* 2003 Jun 1;170(11):5583-9. PubMed PMID: 12759437.
6. Harder J, Schroder JM. RNase 7, a novel innate immune defense antimicrobial protein of healthy human skin. *J Biol Chem.* 2002 Nov 29;277(48):46779-84. Epub 2002 Sep 18. PubMed PMID: 12244054.
7. Timothy D. Starner Susceptibility of nontypeable *Haemophilus influenzae* to human beta-defensins is influenced by lipooligosaccharide acylation infection and immunity, 2002, Vol: 70 (9) pp. 5287-5289.
8. Schibli DJ, Hunter HN, Aseyev V, Starner TD, Wiencek JM, McCray PB, et al. The solution structures of the human beta-defensins lead to a better understanding of the potent bactericidal activity of HBD3 against *Staphylococcus aureus*. *J Biol Chem.* 2002 Mar 8;277(10):8279-89. Epub 2001 Dec 11. PubMed PMID: 11741980.