ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Human Beta-Defensin 1 (HBD-1) Antibodies

□ Cat. # HBD12-P	HBD-1 Control Peptide	**SIZE**: 100 ug
□ Cat. # HBD12-S	Rabbit Anti-HBD-1 antiserum	**SIZE**: 100 ul
□ Cat. # HBD12-A	Rabbit Anti-HBD-1 IgG (affinity pure)	**SIZE**: 100 ug

Antimicrobial peptides are a common mechanism of host defense utilized by a variety of species, from insects to humans. Defensins are a large family of broad-spectrum antimicrobial peptides, identified originally in leukocytes of rabbits and humans. **Defensins**, cationic/polar peptides (30-35 aa; 3-4 kDa), are distinguished by a conserved tri-disulfides and a largely β-Sheet structure. Defensins, expressed at the cell surface, have been hypothesized to function as a biochemical barrier against microbial infection by inhibiting colonization of the epithelium by wide range of pathogenic microorganisms.

The genes encoding human **α and β -defensins** are clustered in a contiguous segment of chromosome 8p23. Defensins are classified into two families designated α – and β - based on distinctive, although similar, tri-disulfide linkages in the peptides. **β**-defensins are slightly larger and differ in the position and arrangement of 3 disulfides. In humans, six α –defensin (**cryptidins**), **HD 1-6** (HD1-4 are also known as **HNP1-4** for Human Neutrophil Peptides), and two β -defensins, **HBD-1 and HBD-2**, have been identified to date. Rat (**RBD-1 and RBD-2**) and mouse (**MBD1-4**) homologues of the human beta-defensin have also been identified.α-defensins are encoded by genes designated DEFA1-6, whereas human **β**-defensins are encoded by the DEFB1 and DEFb2 genes

Source of Antigen and Antibodies

Antigen	A 17 AA Peptide **(designated HBD12-P; control peptide) Epitope location** Near the N-terminus of **mature human defensin-1** conjugated to KLH
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (**#HBD12**-S) and IgG, purified over antigen-agarose (Cat # **HBD12**-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
□ 100ul □ solution □ lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
□ 100 ug/100ul □ solution □ lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
□ 100 ug/100 ul □ solution □ lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

Long-term: at –20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20°C or below.
Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: see refs 2.

Specificity & Cross-reactivity

The HBD12-P sequence is 94% conserved in monkey beta deffensin-1. No significant homology exists with mouse or rat defensin-1 or other beta-defensins (2-4). We recommend the use of antibody Cat # MBD11 that is made to mouse defensin-1 peptide for the detection of mouse beta-defensin-1. Antibody cross-reactivity in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at:the web site).

General References: (1)..Huttner Km (1997) FEBS Lett. 413, 45-69; Liu L (1997) Genomics 43, 316-320; McCray PB (1997) Am, J. Respir. Cell. Mol. Biol. 16, 343-349; Bensch KW (1995) FEBS Lett. 368, 331-335; Bartels J (1997) Nature 387, 861; Ganz T (1999) Science 286, 420; Yang D (1999) Science 286, 525.

(2) Citations of ADI's Antibodies (see web site for updated list)

Wade KB 2004 Microbes and Infection 6, 51-57, IHC
Supp DM 2004 Burns 30, 643-649, IHC

*This product is for In vitro research use only.

Related material available from ADI

Antibodies alpha and beta-defensins and MMP7

Study distribution of proteins in pre-**made Kidney blots** from 7 defined regions of rat kidney

HBD12-S-A-P 71215S

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