

Product Specification Sheet

**Human Beta-Defensin 1 (HBD-1) Antibodies**

<input type="checkbox"/> Cat. # HBD12-P	HBD-1 Control Peptide	<b>SIZE:</b> 100 ug
<input type="checkbox"/> Cat. # HBD12-S	Rabbit Anti-HBD-1 antiserum	<b>SIZE:</b> 100 ul
<input type="checkbox"/> Cat. # HBD12-A	Rabbit Anti-HBD-1 IgG (affinity pure)	<b>SIZE:</b> 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  $\beta$ -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  $\alpha$  and  $\beta$  -defensins are clustered in a contiguous segment of chromosome 8p23. Defensins are classified into two families designated  $\alpha$  - and  $\beta$  - based on distinctive, although similar, tri-disulfide linkages in the peptides.  $\beta$ -defensins are slightly larger and differ in the position and arrangement of 3 disulfides. In humans, six  $\alpha$  -defensin (**cryptidins**), **HD 1-6** (HD1-4 are also known as **HNP1-4** for Human Neutrophil Peptides), and two  $\beta$  -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.  $\alpha$ -defensins are encoded by genes designated DEFA1-6, whereas human  $\beta$ -defensins are encoded by the DEFB1 and DEFB2 genes

**Source of Antigen and Antibodies**

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