ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Beta-Defensin 2 (HBD-2)

Cat. # HBD24-P Full length HBD-2, linear **SIZE**: 100 ug

FORM: Soln Lyophilized **Lot #** 4440P

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. In leukocytes, these peptides are stored in cytoplasmic granules and are released into phagolysosomes where they contribute to the killing of engulfed 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

Human Beta defensin-2 is synthesized from 64 aa precursor (mature peptide 24-64 aa). The sequence of mature HBD-2 is: GIG DPV TCL KSG AIC HPV FCP RRY KQI GTC GLP GTK CCK KP, 41aa; Mol Wt 4335.00). This preparation (Cat # HBD22-P) has not been oxidized to form dilsulfides.

Form & Storage

The peptide is provided as lyophilized powder. Appropriate stock solution can be prepared and stored frozen in suitable aliquots. We recommend the storage of peptides in powder form in tightly capped vials at –20oC or below.

Specificity & Cross-reactivity

The HBD-2 sequence is ~ 50% conserved bovine and rat beta defensin-2. Biological activity of the HBD24-P has not been established. MBD24-P can be used as a positive control for ELISA or as blocking peptide for human beta-defensin-2 antibodies. A biologically active preparation of HBD-2 (Cat # HBD25-R) is now available.

General References:

Harder J et al (1997) Nature 387, 861; Diamond J. et al (2000) Infect. Immun. 68, 113-119; Morrision GM et al (1999) FEBS lett. 442, 112-116; liu L et al (1998) Gene 222, 237-244; Bartels J et al (1997) Nature 387, 861; Ganz T (1999) Science 286, 420; Yang D et al (1999) Science 286, 525.

*This product is for In vitro research use only.

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HBD24-P rev. 40123S

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