

# HNP (H-2): sc-390796

## BACKGROUND

Defensins are a family of microbicidal and cytotoxic peptides which are made by neutrophils and are thought to be involved in host defense. Defensins are abundant in the granules of neutrophils and are also found in the epithelia of mucosal surfaces such as those of the intestine, respiratory tract, urinary tract and vagina. There are six  $\alpha$ -defensins, which are known as human neutrophil peptides (HNPs) in humans. HNP-1,2,3 and 4 are found in the microbicidal granules of neutrophils; HNP-5 and HNP-6 are located in Paneth cells of the intestinal tract. HNP-1 is found in the microbicidal granules of neutrophils and probably plays a role in phagocyte-mediated host defense. HNP-1, HNP-2 and HNP-3, which comprise about 30% of the total granule protein of the neutrophil, are secreted by most normal individuals. The HNP-1 protein is encoded by the  $\alpha$ 1-defensin (DEFA1) gene. HNP-3 is encoded by the  $\alpha$ 3-defensin (DEFA3) gene. HNP2 is a mature cleavage product of both precursor HNP-1 and HNP-3.

## REFERENCES

- Ouellette, A.J., et al. 1989. Localization of the cryptdin locus on mouse chromosome 8. *Genomics* 5: 233-239.
- Sparkes, R.S., et al. 1989. Assignment of defensin gene(s) to human chromosome 8p23. *Genomics* 5: 240-244.
- Hill, C.P., et al. 1991. Crystal structure of defensin HNP-3, an amphiphilic dimer: mechanisms of membrane permeabilization. *Science* 251: 1481-1485.
- Ganz, T. and Lehrer, R.I. 1995. Defensins. *Pharm. Ther.* 66: 191-205.
- Mars, W.M., et al. 1995. Inheritance of unequal numbers of the genes encoding the human neutrophil defensins HP-1 and HP-3. *J. Biol. Chem.* 270: 30371-30376.
- Liu, L., et al. 1997. The human  $\beta$ -defensin-1 and  $\alpha$ -defensins are encoded by adjacent genes: two peptide families with differing disulfide topology share a common ancestry. *Genomics* 43: 316-320.

## CHROMOSOMAL LOCATION

Genetic locus: DEFA1/DEFA3 (human) mapping to 8p23.1.

## SOURCE

HNP (H-2) is a mouse monoclonal antibody raised against amino acids 18-94 mapping at the C-terminus of HNP 3 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HNP (H-2) is available conjugated to agarose (sc-390796 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390796 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390796 PE), fluorescein (sc-390796 FITC), Alexa Fluor<sup>®</sup> 488 (sc-390796 AF488), Alexa Fluor<sup>®</sup> 546 (sc-390796 AF546), Alexa Fluor<sup>®</sup> 594 (sc-390796 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-390796 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-390796 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-390796 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

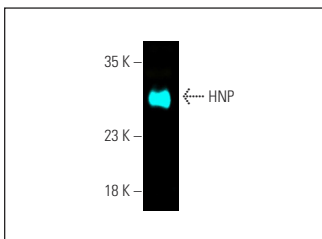
HNP (H-2) is recommended for detection of precursor HNP-1 and HNP-3, and the mature cleavage product HNP-2 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Positive Controls: human PBL whole cell lysate.

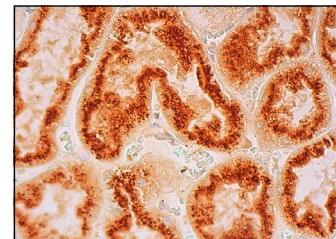
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



HNP (H-2) Alexa Fluor<sup>®</sup> 647: sc-390796 AF647. Direct fluorescent western blot analysis of HNP expression in human PBL whole cell lysate. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214.



HNP (H-2): sc-390796. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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