

# PRODUCT INFORMATION



## Defensin HNP-2 (human) (trifluoroacetate salt)

Item No. 24571

**Formal Name:** L-cysteinyl-L-tyrosyl-L-cysteinyl-L-arginyl-L-isoleucyl-L-prolyl-L-alanyl-L-cysteinyl-L-isoleucyl-L-alanyl-glycyl-L- $\alpha$ -glutamyl-L-arginyl-L-arginyl-L-tyrosyl-glycyl-L-threonyl-L-cysteinyl-L-isoleucyl-L-tyrosyl-L-glutamyl-glycyl-L-arginyl-L-leucyl-L-tryptophyl-L-alanyl-L-phenylalanyl-L-cysteinyl-L-cysteine cyclic (1→29),(3→18), (8→28)-tris(disulfide), trifluoroacetate salt

**Synonyms:** DEFA2 Protein,  $\alpha$ -Defensin 2, Human Neutrophil Peptide 2, Neutrophil Defensin 2

**MF:** C<sub>147</sub>H<sub>217</sub>N<sub>43</sub>O<sub>37</sub>S<sub>6</sub> • XCF<sub>3</sub>COOH

**FW:** 3,371.0

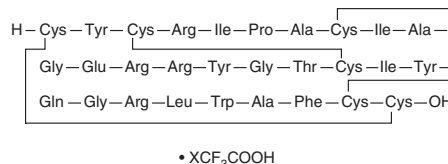
**Purity:** ≥95%

**Supplied as:** A lyophilized powder

**Storage:** -20°C

**Stability:** ≥4 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.



### Laboratory Procedures

Defensin HNP-2 (human) (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the defensin HNP-2 (human) (trifluoroacetate salt) in water. The solubility of defensin HNP-2 (human) (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Defensin HNP-2 is a peptide with antimicrobial properties that is secreted by human polymorphonuclear leukocytes (PMNs).<sup>1</sup> It induces 26.2 and 43.5% lysis of mammalian cells at concentrations of 25 and 100  $\mu$ g/ml, respectively.<sup>2</sup> It also completely inhibits secretion of the exotoxin superantigen TSS toxin-1 (TSST-1) from *S. aureus* at a concentration of 5 ng/ml and inhibits infection of McCoy cells by *C. trachomatis* elementary bodies (EBs).<sup>3,4</sup> Defensin HNP-2 binds to recombinant HIV-1 envelope glycoprotein gp120 and human CD4 ( $K_{dS}$  = 8 and 15.8 nM, respectively).<sup>5</sup> It also induces permeabilization of large unilamellar vesicles (LUVs) formed from 1-palmitoyl-2-oleoyl-*sn*-glycero-3-PG (POPG; Item No. 15105).<sup>6</sup>

### References

1. Lehrer, R.I. Primate defensins. *Nat. Rev. Microbiol.* **2**(9), 727-738 (2004).
2. Lichtenstein, A., Ganz, T., Selsted, M.E., et al. *In vitro* tumor cell cytotoxicity mediated by peptide defensins of human and rabbit granulocytes. *Blood* **68**(6), 1407-1410 (1986).
3. Merriman, J.A., Nemeth, K.A., and Schlievert, P.M. Novel antimicrobial peptides that inhibit gram positive bacterial exotoxin synthesis. *PLoS One* **9**(4), (2014).
4. Yasin, B., Harwig, S.S.L., Lehrer, R.I., et al. Susceptibility of *Chlamydia trachomatis* to protegrins and defensins. *Infect. Immun.* **64**(3), 709-713 (1996).
5. Wang, W., Owen, S.M., Rudolph, D.L., et al. Activity of  $\alpha$ - and  $\theta$ -defensins against primary isolates of HIV-1. *J. Immunol.* **173**(1), 515-520 (2004).
6. Wimley, W.C., Selsted, M.E., and White, S.H. Interactions between human defensins and lipid bilayers: Evidence for formation of multimeric pores. *Protein Sci.* **3**(9), 1362-1373 (1994).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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