

Product Specification Sheet

Purified Hecpidins (HEPC)

Cat. # HEPC61-P	Human HEPC 25-aa	SIZE: 100 ug	FORM: Soln	Lyophilized
Cat. # HEPC61-P-1	Human HEPC 25-aa	SIZE: 1 mg	FORM: Soln	Lyophilized
Cat. # HEPC61-P-5	Human HEPC 25-aa	SIZE: 5 mg	FORM: Soln	Lyophilized
Cat. # HEPC71-P	Human HEPC 20 aa	SIZE: 100 ug	FORM: Soln	Lyophilized
Cat. # HEPC81-P	Mouse HEPC 25-aa	SIZE: 100 ug	FORM: Soln	Lyophilized
Cat. # HEPC82-P	Biotin-Mouse HEPC 25-aa	SIZE: 100 ug	FORM: Soln	Lyophilized

Hecpidin (Hepc, hepatic bactericidal protein) or LEAP (liver expressed antimicrobial peptide) is small, cysteine-rich peptide, antimicrobial peptide similar to defensins and thionins. Hecpidin (unprocessed, proprotein in mouse 83 aa, rat/human 84 aa) are almost exclusively produced in liver. Human hecpidin is produced from 84-aa precursor, including a putative 24-aa signal peptide. The secreted form of hecpidin in blood and urine is consists of C-terminal 20, 22 or 25-aa residues in humans and 25-aa in mouse. In humans, 20-aa and 25-aa appears to be the major HEPC secreted peptides with antimicrobial activities. The three secreted HEPC alternatively spliced HEPC peptides differ at the N-terminus.

Human DTTFP ICIFC CGCCH RSKCG MCCKT (25-aa)
 ICIFC CGCCH RSKCG MCCKT (20-aa)
 Mouse DTNFP ICIFC CKCCN NSQCG ICCKT (25 aa)

4 cys-Cys bridges

The link between hecpidins and iron metabolism is that hecpidin expression is abolished in mice exhibiting iron-overload due to the targeted disruption of **USF2 (upstream stimulatory factor 2)** gene resembling the situation in *hfe*^{-/-} mice. The human gene is located at chromosome 19, in close proximity with *Usf2* gene. Hecpidin levels are increased in iron loading and in beta-2 microglobulin knockout mice. Hecpidins are devoid of IRE. Like other antimicrobial peptides, hecpidin is up-regulated by lipopolysaccharides (LPS).

Source of Antigen/ Peptide

Human and mouse HEPC (20 and 25-aa, sequence given above) were synthesized, purified to >95% by HPLC. Mouse HEPC-25 was also synthesized with N-terminal Biotin. Cysteines were air-oxidized assuming that they will assume natural cys-cys bridging. We do not know the order of Cys-Cys bridges. Mol. Wts are as follows:

#HEPC-61	Mol wt. 2798	human HEPC 25 aa
#HEPC-71	Mol wt. 2192	human HEPC 20 aa
#HEPC-81	Mol wt. 2763	mouse HEPC 25 aa
#HEPC-82	Mol wt. 3097	Biotin-mouse HEPC-25

Form & Storage of Antibodies/Peptide Control

Control/blocking peptide

100 ug/100 ul solution
 50 ug/50 ul lyophilized powder
 Buffer: PBS pH 7.5
Reconstitute in PBS at 1 mg/ml

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

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

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for lyophilized items.

Recommended Usage

Various purified HEPC are useful for developing ELISA, antibody blocking or as positive control for various antibodies to HEPC available from ADI. Biological or antimicrobial activities of these HEPC peptides have not been studied. These peptides, because of its small size (2-3 kDa), are not recommended for Western. It should be used in ELISA or antibody blocking (use 5-10 ug control peptide per 1 ug of IgG or 1 ul of antiserum) experiments to demonstrate antibody specificity (see detailed protocol at the web site).

General References: (1). Pigeon C et al (2001) JBC 276, 7811-7819; Park CH et al (2001) JBC 276, 7806-7810, Krause A et al (2000) FEBS Lett. 480, 147-150; Fleming RE and Sly WS (2001) PNAS 99, 8160-8162; Nicolas G et al (2002) PNAS 99, 4596-4601

2. Citations of for ADI Antibodies (see updated list at the web site)

Peyssonnaux C, 2006, Blood, 107: 3727, WB, IF, mouse bone marrow and neutrophils, antibody blocking with peptides
Huang Y-S, 2006, Pediatr. Res.,59: 662 – 666, IHC,
Dallalio G, 2003, British J. Haematol. 122, 996-1000, WB, HEPC std and human serum WB

*This product is for in vitro research use only.

Some New Antibodies from ADI...

IRP1-2, HFE, Frataxin, Hecpidin, Hephaestin, NRAMPs, USF2, Ferritin, Light and heavy chains, ferritin and B2-M ELISA, Tfr1-2, ceruloplasmin, B2-Micro globulin,

HEPC61-71-81-82 71214A