

LL-37 (H-40): sc-50423

BACKGROUND

Cathelicidins are a family of antimicrobial proteins found in the peroxidase-negative granules of neutrophils. Along with the family of proteins known as defensins, cathelicidins participate in the first line of defense by preventing local infection and systemic invasion of microbes. CAP-18 precursor (FALL-39 peptide antibiotic, cationic anti-microbial protein, CAMP, HSD26) is a cathelicidin anti-microbial protein that contains the antibacterial peptide LL-37 (amino acids 134-170). In contrast to the defensins, which are cysteine-rich peptides that fold in β -pleated sheets, LL-37 is a cysteine-free peptide that can adopt an amphipathic α -helical conformation. LL-37 binds to bacterial lipopolysaccharides (LPS) and is a potent chemotactic factor for recruiting mast cells to sites of inflammation. LL-37 is present in inflammatory skin diseases that include psoriasis, sub-acute lupus erythematosus, dermatitis and nickel contact hypersensitivity. It is not found in normal skin epidermis. The secreted protein is expressed primarily in bone marrow, testis and neutrophils. The mouse and rat ortholog, CRAMP (cathelin-related antimicrobial peptide), is also part of the cathelicidin family of host defense peptides. These include precursors of potent antimicrobial peptides that direct antimicrobial activity against various microbial pathogens and also activate mesenchymal cells during wound repair. CRAMP is expressed in testis, spleen, stomach and intestine.

CHROMOSOMAL LOCATION

Genetic locus: CAMP (human) mapping to 3p21.31.

SOURCE

LL-37 (H-40) is a rabbit polyclonal antibody raised against amino acids 131-170 mapping at the C-terminus of LL-37 proteolytic fragment of CAP-18 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

LL-37 (H-40) is recommended for detection of mature LL-37 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for LL-37 siRNA (h): sc-43697, LL-37 shRNA Plasmid (h): sc-43697-SH and LL-37 shRNA (h) Lentiviral Particles: sc-43697-V.

Molecular Weight of CAP-18 precursor: 16 kDa.

Molecular Weight of CAP-18 prodomain: 14 kDa.

Molecular Weight of LL-37 peptide: 3-4 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Meldrum, D.J., et al. 1990. Partial humeri of two Miocene Colombian primates. *Am. J. Phys. Anthropol.* 81: 413-422.
- Lee, H.M., et al. 2009. Apurinic/aprimidinic endonuclease 1 is a key modulator of keratinocyte inflammatory responses. *J. Immunol.* 183: 6839-6848.
- Zhang, J., et al. 2011. Novel sulfated polysaccharides disrupt cathelicidins, inhibit RAGE and reduce cutaneous inflammation in a mouse model of rosacea. *PLoS ONE* 6: e16658.
- McMahon, L., et al. 2011. Vitamin D-mediated induction of innate immunity in gingival epithelial cells. *Infect. Immun.* 79: 2250-2256.
- Lee, H.M., et al. 2012. *Mycobacterium abscessus* activates the NLRP3 inflammasome via Dectin-1-Syk and p62/SQSTM1. *Immunol. Cell Biol.* 90: 601-610.
- Grether-Beck, S., et al. 2012. Urea uptake enhances barrier function and antimicrobial defense in humans by regulating epidermal gene expression. *J. Invest. Dermatol.* 132: 1561-1572.
- Rico-Mata, R., et al. 2013. Effect of antimicrobial peptides derived from human cathelicidin LL-37 on *Entamoeba histolytica* trophozoites. *Exp. Parasitol.* 133: 300-306.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.


 MONOS
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Try **LL-37 (D-5): sc-166770**, our highly recommended monoclonal alternative to LL-37 (H-40). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **LL-37 (D-5): sc-166770**.