

LL-37 (C-14): sc-21578

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. FALL-39 precursor (FALL-39 peptide antibiotic, cationic anti-microbial protein, CAMP, CAP-18, 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.

REFERENCES

1. Popsueva, A.E., et al. 1996. A novel murine cathelin-like protein expressed in bone marrow. *FEBS Lett.* 391: 5-8.
2. Gallo, R.L., et al. 1997. Identification of CRAMP, a cathelin-related antimicrobial peptide expressed in the embryonic and adult mouse. *J. Biol. Chem.* 272: 13088-13093.
3. Frohm, M., et al. 1997. The expression of the gene coding for the antibacterial peptide LL-37 is induced in human keratinocytes during inflammatory disorders. *J. Biol. Chem.* 272: 15258-15263.

CHROMOSOMAL LOCATION

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

SOURCE

LL-37 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide 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.

Blocking peptide available for competition studies, sc-21578 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

LL-37 (C-14) is recommended for detection of mature LL-37 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Rivas-Santiago, B., et al. 2008. Expression of cathelicidin LL-37 during *Mycobacterium tuberculosis* infection in human alveolar macrophages, monocytes, neutrophils, and epithelial cells. *Infect. Immun.* 76: 935-941.
2. Chakraborty, K., et al. 2008. Bacterial exotoxins downregulate cathelicidin (hCAP-18/LL-37) and human β -defensin 1 (HBD-1) expression in the intestinal epithelial cells. *Cell. Microbiol.* 10: 2520-2537.
3. Stubbs, J.R., et al. 2010. Cholecalciferol supplementation alters calcitriol-responsive monocyte proteins and decreases inflammatory cytokines in ESRD. *J. Am. Soc. Nephrol.* 21: 353-361.
4. Koon, H.W., et al. 2011. Cathelicidin signaling via the Toll-like receptor protects against colitis in mice. *Gastroenterology* 141: 1852-1863.
5. Barna, B.P., et al. 2012. Alveolar macrophage cathelicidin deficiency in severe sarcoidosis. *J. Innate Immun.* 4: 569-578.

RESEARCH USE

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



Try **LL-37 (D-5): sc-166770**, our highly recommended monoclonal alternative to LL-37 (C-14). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **LL-37 (D-5): sc-166770**.