

CRAMP (R-170): sc-66843

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 Gram-negative bacteria 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 hyper-sensitivity. 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.
4. Sorensen, O., et al. 2001. Human cathelicidin, hCAP-18, is processed to the antimicrobial peptide LL-37 by extracellular cleavage with proteinase 3. *Blood* 97: 3951-3959.
5. Murakami, M., et al. 2002. Cathelicidin antimicrobial peptides are expressed in salivary glands and saliva. *J. Dent. Res.* 81: 845-850.
6. Niyonsaba, F., et al. 2002. A cathelicidin family of human antibacterial peptide LL-37 induces mast cell chemotaxis. *Immunology* 106: 20-26.

CHROMOSOMAL LOCATION

Genetic locus: Camp (mouse) mapping to 9 F2.

SOURCE

CRAMP (R-170) is a rabbit polyclonal antibody raised against amino acids 6-175 mapping at the C-terminus of CRAMP of rat origin.

PRODUCT

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

APPLICATIONS

CRAMP (R-170) is recommended for detection of CRAMP of mouse and rat 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 CRAMP siRNA (m): sc-45283, CRAMP shRNA Plasmid (m): sc-45283-SH and CRAMP shRNA (m) Lentiviral Particles: sc-45283-V.

Molecular Weight of CRAMP: 20 kDa.

Positive Controls: CSMLO whole cell lysate: sc-364369.

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

1. Yuan, X., et al. 2010. The corneal expression of antimicrobial peptides during experimental fungal keratitis. *Curr. Eye Res.* 35: 872-879.
2. Koon, H.W., et al. 2011. Cathelicidin signaling via the Toll-like receptor protects against colitis in mice. *Gastroenterology* 141: 1852-1863.
3. Chen, K., et al. 2013. Signal relay by CC chemokine receptor 2 (CCR2) and formylpeptide receptor-2 (Fpr2) in the recruitment of monocyte-derived dendritic cells in allergic airway inflammation. *J. Biol. Chem.* 288: 16262-16273.

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.



Try **CRAMP (G-1): sc-166055**, our highly recommended monoclonal alternative to CRAMP (R-170). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **CRAMP (G-1): sc-166055**.