MONOCLONAL ANTIBODY TO HUMAN LL37/CAP18
clone 1-1C12

Catalog nr HM2071 (lot number and expiry date are indicated on the label)

Description Cathelicidins are a family of antimicrobial proteins predominantly found in the peroxidase-negative granules of neutrophils. During bacterial infections, the life span of neutrophils is regulated by various pathogen- and host-derived substances. The cathelicidins are synthesized as preproproteins. Within the neutrophils, they are stored in granules as inactive proforms after removal of the signal peptide. The active biologic domains of the cathelicidins generally reside in the C-terminus. The C-terminal antimicrobial peptides are activated when cleaved from the proforms of the cathelicidins by serine proteases from azurophil granules. Human cationic antimicrobial protein (hCAP)18 is the only human cathelicidin identified to date. hCAP18 (18 kD) is a major protein in specific granules of neutrophils, but it is also present in subpopulations of lymphocytes and monocytes, in squamous epithelia (of the mouth, tongue, esophagus, cervix, and vagina), pulmonary epithelium, keratinocytes in inflammatory skin diseases and in the epididymus. The antibacterial C-terminus of hCAP-18, LL37 (37 aminoacids), has been shown to exert broad antimicrobial activity towards gram-negative as well as gram-positive bacteria and to have synergistic antibacterial effects with the defensins. For instance deficiency in saliva LL37 accords with occurrence of periodontal disease in patients with morbus Kostmann. LL-37 does not only kill bacteria, but can also modulate (suppress) neutrophil apoptosis via the activation of FPRL1 and P2X7 in bacterial infections. Suppression of neutrophil apoptosis results in the prolongation of their life span, and may be advantageous for host defense against bacterial invasion. Moreover it functions as a chemotactic agent for neutrophils, monocytes and T cells. LL-37 is markedly resistant to proteolytic degradation and to a limited extent also cytotoxic towards mammalian cells. The antibody detects both free LL37 and total hCAP18.

Species Mouse IgG_{2a}

Formulation 1 ml (100 µg/ml) 0.2 µm filtered antibody solution in PBS, containing 0.1% bovine serum albumin and 0.02% sodium azide.

Application The antibody can be used for Western blotting.

Use For Western blotting dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50.

Storage and stability Product should be stored at 4°C. Under recommended storage conditions, product is stable for one year.

Precautions For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and Federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result with the use of or derivation of this product.

References

1. Tjabringa, G et al; The antimicrobial peptide LL-37 activates innate immunity at the airway epithelial surface by transactivation of the epidermal growth factor receptor. J Immunol 2003, *171*: 6690
2. Nell, M et al; Bacterial products increase expression of the human cathelicidin hCAP-18/LL-37 in cultured human sinus epithelial cells. FEMS Immunol Med Microbiol 2004, *42*: 225
3. Sørensen, O et al; Human cathelicidin, hCAP-18, is processed to the antimicrobial peptide LL-37 by extracellular cleavage with proteinase 3. Blood 2001, *97*: 3951

Also available

HM2070	Monoclonal antibody against Human LL37/CAP18, clone 3D11
HC4013	Human LL37 peptide (37 aa), 50 µg