

CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	LL-37/CAP-18, Human, clone 1-1C12		
Catalog number	HM2071-20UG		
Lot number	-	Expiry date	-
Volume	200 µl	Amount	20 µg
Formulation	0.2 µm filtered in PBS+0.1%BSA+0.02%NaN3	Concentration	100 µg/ml
Host Species	Mouse IgG2a	Conjugate	None
Endotoxin	N.A.	Purification	Protein G
Storage	4°C		

Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #		6	5			1,4,6		1-3,6
Yes		•	•			•		•
No								
N.D.	•			•	•		•	

N.D.= Not Determined; IHC = Immuno histochemistry; F = Frozen sections; P = Paraffin sections; IF = Immuno Fluorescence; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IP = Immuno Precipitation; W = Western blot

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.

- IA: 1-1C12 was used as detection antibody (1:120 in dilution buffer)
- IF: paraformaldehyde fixed cells were incubated with 1-1c12 (1:50 diluted)
- P: Sections were deparaffinized with sodium citrate and stained for LL-37 (1:50 diluted)
- W: A non-reduced sample treatment and denaturing or native SDS-PAGE was applied. Proteins were transferred to nitrocellulose, blocked with 5% dry milk and incubated with 1-1c12 1:250-1000 dilution. The band sizes are 18 and 4.5 kDa for hCAP-18 and LL-37 respectively (Ref.1-3)
- Positive control: Neutrophils; Negative control: *Ex-vivo* differentiated neutrophils.

General Information

Description	The monoclonal antibody 1-1C12 recognizes free LL-37 as well as its precursor human CAP18 (hCAP18). hCAP18 is a cathelicidin protein of ~18 kDa. It belongs to the cathelicidin family of antimicrobial peptides that are characterized by a conserved N-terminal cathelin domain and a variable C-terminal antimicrobial domain. Cathelicidins are 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. Within the neutrophils, the cathelicidins are synthesized as preproteins. After removal of the signal peptide, they are stored in granules as inactive proforms. The C-terminal antimicrobial peptides are activated when cleaved from the proforms of the cathelicidins by serine proteases from azurophil granules. hCAP18 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 hCAP18, LL-37 (37 amino acids), 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, LL-37 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.
Immunogen	Mixture of synthetic native and glutaraldehyde cross-linked LL-371
Aliases	Cathelicidin antimicrobial peptide, hCAP-18, Antibacterial protein LL-37, Cap-18, CRAMP; HSD26; FALL39; FALL-39; CAMP
References	<ol style="list-style-type: none"> 1. Felgentreff, K et al; The antimicrobial peptide cathelicidin interacts with airway mucus. <i>Peptides</i> 2006, 27: 3100 2. Bucki, R et al; Salivary mucins inhibit antibacterial activity of the cathelicidin-derived LL-37 peptide but not the cationic steroid CSA-13. <i>J Antimicrob Chemother</i> 2008, 62: 329 3. Dick, E et al; Ex vivo-expanded bone marrow CD34+ derived neutrophils have limited bactericidal ability. <i>Stem Cells</i> 2008, 26: 2552

4. Von Haussen, L et al; The host defence peptide LL-37/hCAP18 is a growth factor for lung cancer cells. Lung Canc 2008, 59: 12
5. Kockritz-Blickwede, M et al. Phagocytosis-independent antimicrobial activity of mast cells by means of extracellular trap formation. Blood 2008. 111(6): 3070
6. Coffelt, SB. Ovarian cancers overexpress the antimicrobial protein hCAP-18 and its derivative LL-37 increases ovarian cancer cell proliferation and invasion. Int J Cancer 2008. 122: 1030-1039

Storage&stability Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least 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 from the use or derivation of this product.

We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC
Brenda Teunissen

Date
16/11/2020

Do you have any questions or comments regarding this product? Please contact us via support@hycultbiotech.com.