

CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	LL-37/CAP-18, Human, clone 3D11	Expiry date	-
Catalog number	HM2070-500UG	Amount	500 µg
Lot number	-	Concentration	>0.5 mg/ml
Volume	-	Conjugate	None
Formulation	0.2 µm filtered in PBS	Purification	Protein G
Host Species	Mouse IgG1		
Endotoxin	<24 EU/mg		
Storage	4°C		

Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #		2,3	3		4,5			1
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.

- FS: Addition of the antibody reduces, after 3 h incubation, the cytotoxicity of D39 pneumococci induced by Human lung mast cells (HLMCs).
- IF: Antibody was used on isolated neutrophils fixed with PMA on lysinated glass slides and blocked with PBS-5% goat serum-1% BSA.
- P: Paraffin sections were deparaffinized, rehydrated and endogenous peroxidase was quenched using 0.3% H₂O₂ in methanol for 20 min. After antigen retrieval sections were incubated with 1.5 µg/ml antibody.
- Positive control: Neutrophils.

General Information

Description Cationic antimicrobial peptides, such as cathelicidins play important roles in the defense against infections by eliminating a wide range of pathogens. hCAP-18/LL-37 is the only cathelicidin identified in humans and it is produced by neutrophils, monocytes, mast cells, and epithelial cells. It is stored in these cells as a propeptide, which can be cleaved extracellularly by enzymes like proteinase 3, resulting in the formation of LL-37 and a cathelin part. LL-37 is an amphipathic α -helical peptide that can affect both planktonic bacteria and those residing in biofilms, viruses such as HIV and fungi, and it can neutralize LPS and lipoteichoic acid (LTA). In addition to its antimicrobial actions, LL-37 participates at the interface of innate and adaptive immunity by modulating cytokine and chemokine production by a range of cell types, chemoattracting various immune effector cells and mesenchymal stem cells, regulating autophagy in conjunction with vitamin D, and stimulating angiogenesis and wound healing. 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 (MW 4 kDa) and complete hCAP18 (MW 19 kDa). The monoclonal antibody 3D11 can be used for neutralizing the function of LL-37. The ability of mast cells to kill pneumococci was significantly attenuated using the monoclonal antibody 3D11.

Immunogen Human LL-37 peptide

Aliases Cathelicidin antimicrobial peptide, hCAP-18, Antibacterial protein LL-37, Cap-18, CRAMP; HSD26; FALL39; FALL-39; CAMP

- References**
1. 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
 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. Kessenbrock, K et al; Netting neutrophils in autoimmune small-vessel vasculitis. *Nature med* 2009, 15: 623
 4. Cruse, G et al; Human lung mast cells mediate pneumococcal cell death in response to activation by pneumolysin. *J Immunol* 2010, 184: 7108

5. Coffelt, S et al; The pro-inflammatory peptide LL-31 promotes ovarian tumor progression through recruitment of multipotent mesenchymal stromal cells. PNAS 2009, 106(10): p3806-3811

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
05/11/2019

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