CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	LL-37/CAP-18, Human, clone 3D11		
Catalog number	HM2070-20UG		
Lot number	-	**Expiry date**	-
Volume	200 µl	**Amount**	20 µg
Formulation	0.2 µm filtered in PBS+0.1%BSA	**Concentration**	100 µg/ml
Host Species	Mouse IgG1	**Conjugate**	None
Endotoxin	<24 EU/mg	**Purification**	Protein G
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 ug/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 a-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 significant 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	Date
Brenda Teunissen	16/11/2020

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