

# PRODUCT INFORMATION



## LL-37 amide (trifluoroacetate salt)

Item No. 24764

<b>Formal Name:</b>	L-leucyl-L-leucylglycyl-L- $\alpha$ -aspartyl-L-phenylalanyl-L-phenylalanyl-L-arginyl-L-lysyl-L-seryl-L-lysyl-L- $\alpha$ -glutamyl-L-lysyl-L-isoleucylglycyl-L-lysyl-L- $\alpha$ -glutamyl-L-phenylalanyl-L-lysyl-L-arginyl-L-isoleucyl-L-valyl-L-glutamyl-L-arginyl-L-isoleucyl-L-lysyl-L- $\alpha$ -aspartyl-L-phenylalanyl-L-leucyl-L-arginyl-L-asparagyl-L-leucyl-L-valyl-L-prolyl-L-arginyl-L-threonyl-L- $\alpha$ -glutamyl-L-serinamide, trifluoroacetate salt	H—Leu—Leu—Gly—Asp—Phe—Phe—Arg—Lys—Ser—Lys—Glu—Lys—Ile—Gly—Lys—Glu—Phe—Lys—Arg—Ile—Val—Gln—Arg—Ile—Lys—Asp—Phe—Leu—Arg—Asn—Leu—Val—Pro—Arg—Thr—Glu—Ser—NH <sub>2</sub>
<b>Synonyms:</b>	CAP-18, hCAP-18, Cathelicidin, FALL-39	• XCF <sub>3</sub> COOH
<b>Synonym Sequence:</b>	LLGDFFRKSKEKIGKEFKRIVQRIKDFLRNLPRTES-NH <sub>2</sub>	
<b>MF:</b>	C <sub>205</sub> H <sub>341</sub> N <sub>61</sub> O <sub>52</sub> • XCF <sub>3</sub> COOH	
<b>FW:</b>	4,492.3	
<b>Purity:</b>	≥95%	
<b>Supplied as:</b>	A lyophilized powder	
<b>Storage:</b>	-20°C	
<b>Stability:</b>	≥4 years	

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

LL-37 amide (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the LL-37 amide (trifluoroacetate salt) in water. The solubility of LL-37 amide (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

LL-37 is a cationic and  $\alpha$ -helical antimicrobial peptide expressed in human bone marrow, testis, granulocytes, and gingival epithelium and is upregulated in psoriatic lesions.<sup>1</sup> It inhibits growth of Gram-positive *E. coli* D21 and Gram-negative *B. megatarium* in a concentration-dependent manner and LL-37 expression is induced in A549 epithelial cells, alveolar macrophages, neutrophils, and monocyte-derived macrophages following *M. tuberculosis* infection.<sup>1-3</sup> LL-37 binds sheep erythrocytes coated with *S. minnesota* Re-LPS and induces agglutination with a minimal agglutinating concentration (MAC) of 12.1  $\mu$ g/ml.<sup>4</sup> It is a chemoattractant for, and can induce calcium mobilization in, human monocytes, neutrophils, and T cells that naturally express formyl peptide receptor-like 1 (FPRL1) and FPRL1-transfected HEK293 cells.<sup>5</sup> LL-37 (10-15  $\mu$ M) pretreatment of dengue virus type 2 (DENV-2) reduces its infectivity as well as levels of viral genomic RNA and NS1 antigen.<sup>6</sup> *In vivo*, LL-37 inhibits cecal ligation and puncture-induced caspase-1 activation and pyroptosis of peritoneal macrophages, reduces levels of the inflammatory cytokines IL-1 $\beta$ , IL-6, and TNF- $\alpha$ , and improves survival in polybacterial septic mice.<sup>7</sup>

### References

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2. Rivas-Santiago, B., Hernandez-Pando, R., Carranza, C., et al. *Infect. Immun.* **76**(3), 935-941 (2008).
3. Gudmundsson, G.H., Agerberth, B., Odeberg, J., et al. *Eur. J. Biochem.* **238**(2), 325-332 (1996).
4. Larrick, J.W., Hirata, M., Balint, R.F., et al. *Infect. Immun.* **63**(4), 1291-1297 (1995).
5. Yang, B.D., Chen, Q., Schmidt, A.P., et al. *J. Exp. Med.* **192**(7), 1069-1074 (2000).
6. Alagarasu, K., Patil, P.S., Shil, P., et al. *Peptides* **92**, 23-30 (2017).
7. Hu, Z., Murakami, T., Suzuki, K., et al. *Int. Immunol.* **28**(5), 245-253 (2016).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897  
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM