PRODUCT INFORMATION

LL-37 (13-37) (human) (trifluoroacetate salt)

Item No. 36949

Formal Name: L-isoleucylglycyl-L-lysyl-L-α-glutamyl-L-phenylalanyl-L-lysyl-L-arginyl-L-isoleucyl-L-valyl-L-glutaminyl-L-arginyl-L-isoleucyl-L-lysyl-L-α-aspartyl-L-phenylalanyl-L-leucyl-L-arginyl-L-asparaginyl-L-leucyl-L-valyl-L-prolyl-L-arginyl-L-threonyl-L-α-glutamyl-L-serine, trifluoroacetate salt

Synonyms: CAP-18, hCAP-18, Cathelicidin, FALL-39, IG-25, LL-13, LL-25

Peptide Sequence: IGKEFKRIVQRIKDFLRNLVPRTES-OH

MF: $C_{137}H_{232}N_{42}O_{36} \bullet XCF_3COOH$

FW: 3,043.6

Purity: ≥95%

Supplied as: A solid

Storage: -20°C

Stability: ≥4 years

H—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—OH
• XCF_3COOH

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

Laboratory Procedures

LL-37 (13-37) (human) (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the LL-37 (13-37) (human) (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. LL-37 (13-37) (human) (trifluoroacetate salt) is soluble (≥10 mg/ml) in organic solvents such as DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of LL-37 (13-37) (human) (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of LL-37 (13-37) (human) (trifluoroacetate salt) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

LL-37 (13-37) is an anticancer peptide fragment of LL-37 (Item No. 24461).[1] It inhibits the ATPase activity of ATP-binding cassette transporter 2, subfamily G (ABCG2) when used at a concentration of 1 µM. LL-37 (13-37) induces cytotoxicity in wild-type SW620 cells and SW620 cells overexpressing P-glycoprotein (P-gp), also known as multidrug resistance protein 1 (MDR1; IC_{50}s = 25.5 and 27.3 µM, respectively), as well as wild-type MCF-7 cells, MCF-7 cells overexpressing ABCG2, and MCF-7 cells overexpressing multidrug resistance-associated protein 1 (MRP1; IC_{50}s = 33.1, 31.8, and 31.1 µM, respectively). It potentiates cytotoxicity induced by mitoxantrone (Item No. 14842) in MCF-7 and HEK293 cells overexpressing ABCG2 when used at concentrations of 5 or 10 µM but not cytotoxicity induced by cisplatin (Item No. 13119) in HEK293 cells overexpressing ABCG2, paclitaxel (Item No. 10461) in SW620 cells overexpressing P-gp, or doxorubicin (Item No. 15007) in MCF-7 cells overexpressing MRP1 at the same concentrations. LL-37 (13-37) (10, 20, or 40 µM) decreases mitoxantrone drug efflux by, and increases mitoxantrone levels in, MCF-7 cells overexpressing ABCG2.

Reference

1. To, K.K.W., Ren, S.X., Wong, C.C.M., *et al.* Reversal of ABCG2-mediated multidrug resistance by human cathelicidin and its analogs in cancer cells. *Peptides* **40**, 13-21 (2013).

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