

Certificate of Analysis

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Product Name: LL 37
CAS Number: 154947-66-7

Catalog No.: 5213 **Batch No.:** 10

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₀₅H₃₄₀N₆₀O₅₃
Batch Molecular Weight: 4493.32
Physical Appearance: White lyophilised solid
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in water
Storage: Store at -20°C
Peptide Sequence: 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

2. ANALYTICAL DATA

HPLC: Shows 95.3% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

| Amino Acid Theoretical | | | Actual | | |
|------------------------|------|------|--------|------|------|
| Ala | | | Lys | 6.00 | 5.90 |
| Arg | 5.00 | 4.94 | Met | | |
| Asx | 3.00 | 3.14 | Phe | 4.00 | 3.99 |
| Cys | | | Pro | 1.00 | 1.01 |
| Glx | 4.00 | 4.14 | Ser | 2.00 | 1.32 |
| Gly | 2.00 | 2.03 | Thr | 1.00 | 0.84 |
| His | | | Trp | | |
| Ile | 3.00 | 2.85 | Tyr | | |
| Leu | 4.00 | 3.84 | Val | 2.00 | 1.85 |

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

LL 37 is an antimicrobial peptide derivative of human cathelicidin. Induces FPRL1-mediated chemotaxis of human neutrophils, monocytes and T cells in vitro. Promotes wound healing following skin-targeted electroporation of a plasmid encoding hCAP-18/LL-37 in mice. LL 37 reduces SARS-CoV-2 infection by blocking the receptor binding domain of the S1 spike protein ($K_d = 11.2$ nM) and by binding to ACE2 ($K_d = 25.5$ nM). LL 37 inhibits SARS-CoV-2 pseudovirion infection ($IC_{50} = 4.74$ μ g/mL) in vitro and in vivo. Also triggers apoptosis in colon cancer cells. Cell permeable.

Physical and Chemical Properties:

Batch Molecular Formula: $C_{205}H_{340}N_{60}O_{53}$
Batch Molecular Weight: 4493.32
Physical Appearance: White lyophilised solid

Peptide Sequence:

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

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water
This product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Counter Ion: TFA

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 μ m filter to remove potential bacterial contamination whenever possible.

References:

Wang et al (2021) Human cathelicidin inhibits SARS-CoV-2 infection: killing two birds with one stone. *ACS Infect.Dis.* **7** 1545. PMID: 33849267.

Steinstraesser et al (2014) Skin electroporation of a plasmid encoding hCAP-18/LL-37 host defense peptide promotes wound healing. *Mol.Ther.* **22** 734. PMID: 24394186.

Ren et al (2012) Host immune defense peptide LL-37 activates caspase-independent apoptosis and suppresses colon cancer. *Cancer Res.* **72** 6512. PMID: 23100468.

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