

Certificate of Analysis

Product Name: β-Lipotropin 61-91

Catalog No.: 8984

Batch No.: 1

CAS Number: 61214-51-5

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₅₈H₂₅₁N₃₉O₄₆S
Batch Molecular Weight: 3465.03
Physical Appearance: White lyophilised solid
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in 20% ethanol / water
Storage: Store at -20°C
Peptide Sequence: Tyr-Gly-Gly-Phe-Met-Thr-Ser-Glu-Lys-Ser-Gln-Thr-Pro-Leu-Val-Thr-Leu-Phe-Lys-Asn-Ala-Ile-Ile-Lys-Asn-Ala-Tyr-Lys-Lys-Gly-Glu

2. ANALYTICAL DATA

HPLC: Shows 96.0% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid		Theoretical	Actual	Amino Acid		Theoretical	Actual
Ala	2.00	2.05	Lys	5.00	5.06		
Arg			Met	1.00	0.95		
Asx	2.00	1.94	Phe	2.00	1.92		
Cys			Pro	1.00	1.00		
Glx	3.00	2.90	Ser	2.00	1.99		
Gly	3.00	3.06	Thr	3.00	3.04		
His			Trp				
Ile	2.00	1.43	Tyr	2.00	1.96		
Leu	2.00	2.15	Val	1.00	0.99		

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

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Description:

β -Lipotropin 61-91 (or β -Endorphin) is an endogenous opioid peptide with potent antinociceptive activity, physiologically released in response to painful stimuli. β -Lipotropin 61-91 can be used to study the expression of μ -opioid receptor in organ cultures and to investigate cardiovascular regulation. In combination with 10 μ M Prostaglandin E2 (Cat. No. 2296) and 1 μ g/mL IGF-1, β -Lipotropin 61-91 (0.01 μ M) constitutes the LIP cocktail, a small molecule mixture used to precondition human β -cells and primary islets, significantly enhancing function and survival when transplanted subcutaneously to f... Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:Batch Molecular Formula: C₁₅₈H₂₅₁N₃₉O₄₆S

Batch Molecular Weight: 3465.03

Physical Appearance: White lyophilised solid

Peptide Sequence:Tyr-Gly-Gly-Phe-Met-Thr-Ser-Glu-Lys-Ser-Gln-
Thr-Pro-Leu-Val-Thr-Leu-Phe-Lys-Asn-Ala-Ile-
Ile-Lys-Asn-Ala-Tyr-Lys-Lys-Gly-Glu**Storage:** Store at -20°C**Solubility & Usage Info:**

Soluble to 1 mg/ml in 20% ethanol / water

This product is supplied in lyophilized form. It may appear as a solid, gel or film and 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:

Vandana et al (2025) ChemPerturb-seq screen identifies a small molecule cocktail enhancing human beta cell survival after subcutaneous transplantation. *CellStemCell* **32** 1. PMID: 40562034.

Hill et al (2002) The effects of beta-endorphin (beta-END) on cardiovascular and behavioral dynamics in conscious rats. *Brain Res.Bull* **59** 29. PMID: 12372545.

Bloom et al (1976) Endorphins: profound behavioral effects in rats suggest new etiological factors in mental illness. *Science* **194** 630. PMID: 185694.

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