

Certificate of Analysis

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Product Name: [Leu⁵]-Enkephalin

Catalog No.: 1889

Batch No.: 8

CAS Number: 58822-25-6

EC Number: 261-457-1

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₈H₃₇N₅O₇
Batch Molecular Weight: 555.63
Physical Appearance: White lyophilised solid
Net Peptide Content: 78%
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in water
Storage: Desiccate at -20°C
Peptide Sequence: Tyr-Gly-Gly-Phe-Leu

2. ANALYTICAL DATA

HPLC: Shows 99.4% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid	Theoretical	Actual	Amino Acid	Theoretical	Actual
Ala			Lys		
Arg			Met		
Asx			Phe	1.00	1.06
Cys			Pro		
Glx			Ser		
Gly	2.00	2.00	Thr		
His			Trp		
Ile			Tyr	1.00	0.96
Leu	1.00	0.97	Val		

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

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Description:

Endogenous opioid agonist peptide; inhibits electrically stimulated contractions in mouse vas deferens (IC₅₀ = 11.4 nM). Short-acting in vivo.

Physical and Chemical Properties:

Batch Molecular Formula: C₂₈H₃₇N₅O₇

Batch Molecular Weight: 555.63

Physical Appearance: White lyophilised solid

Peptide Sequence:

Tyr-Gly-Gly-Phe-Leu

Storage: Desiccate 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.

Net Peptide Content: 78% (Remaining weight made up of counterions and residual water).

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 µm filter to remove potential bacterial contamination whenever possible.

References:

DiMaio et al (1982) Synthesis and pharmacological characterization in vitro of cyclic enkephalin analogues: effect of conformational constraints on opiate receptor selectivity. *J. Med. Chem.* **25** 1432. PMID: 6296388.

Law and Loh (1978) ³H-Leu⁵-enkephalin specific binding to synaptic membrane - comparison with ³H-dihydromorphine and ³H-naloxone. *Res. Commun. Chem. Pathol. Pharmacol.* **21** 409. PMID: 705021.

Meunier et al (1977) Binding of Leu⁵-enkephalin and Met⁵-enkephalin to a particulate fraction from rat cerebrum. *FEBS Lett.* **77** 209. PMID: 862920.

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