

## Certificate of Analysis

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**Product Name:** [Leu<sup>5</sup>]-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:** C<sub>28</sub>H<sub>37</sub>N<sub>5</sub>O<sub>7</sub>  
**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:** Store 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			

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## Product Information

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**Catalog No.:** 1889

**Batch No.:** 8

CAS Number: 58822-25-6

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### Description:

[Leu<sup>5</sup>]-Enkephalin is an endogenous opioid agonist peptide; inhibits electrically stimulated contractions in mouse vas deferens (IC<sub>50</sub> = 11.4 nM). Short-acting in vivo.

### Physical and Chemical Properties:

Batch Molecular Formula: C<sub>28</sub>H<sub>37</sub>N<sub>5</sub>O<sub>7</sub>

Batch Molecular Weight: 555.63

Physical Appearance: White lyophilised solid

### Peptide Sequence:

Tyr-Gly-Gly-Phe-Leu

**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.

**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) <sup>3</sup>H-Leu<sup>5</sup>-enkephalin specific binding to synaptic membrane - comparison with <sup>3</sup>H-dihydromorphine and <sup>3</sup>H-naloxone. *Res. Commun. Chem. Pathol. Pharmacol.* **21** 409. PMID: 705021.

**Meunier et al** (1977) Binding of Leu<sup>5</sup>-enkephalin and Met<sup>5</sup>-enkephalin to a particulate fraction from rat cerebrum. *FEBS Lett.* **77** 209. PMID: 862920.

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