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TOCRIS

Print Date: Dec 13th 2024

# Certificate of Analysis

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**Product Name:** **[Leu$^5$]-Enkephalin**
**Catalog No.: 1889** **Batch No.: 11**
CAS Number: 58822-25-6
EC Number: 261-457-1

## 1. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Batch Molecular Formula:** | $C_{28}H_{37}N_5O_7$ |
| **Batch Molecular Weight:** | 555.63 |
| **Physical Appearance:** | White lyophilised solid |
| **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 | 1.00 |
| Cys | | | Pro | | |
| Glx | | | Ser | | |
| Gly | 2.00 | 1.98 | Thr | | |
| His | | | Trp | | |
| Ile | | | Tyr | 1.00 | 1.02 |
| Leu | 1.00 | 1.01 | Val | | |



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**Product Name:** [Leu$^5$]-Enkephalin

**Catalog No.:** 1889 **Batch No.:** 11

CAS Number: 58822-25-6

EC Number: 261-457-1

**Description:**

[Leu$^5$]-Enkephalin is an endogenous opioid agonist peptide; inhibits electrically stimulated contractions in mouse vas deferens ($IC_{50}$ = 11.4 nM). Short-acting in vivo.

**Physical and Chemical Properties:**

Batch Molecular Formula: $C_{28}H_{37}N_5O_7$

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

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