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# Certificate of Analysis

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**Product Name:** **Deltorphin I** **Catalog No.: 4591** **Batch No.: 2**

CAS Number: 122752-15-2

## 1. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Batch Molecular Formula:** | $C_{37}H_{52}N_8O_{10}$ |
| **Batch Molecular Weight:** | 768.87 |
| **Physical Appearance:** | White lyophilised solid |
| **Net Peptide Content:** | 83% |
| **Counter Ion:** | TFA |
| **Solubility:** | Soluble to 1 mg/ml in 20% formic acid |
| **Storage:** | Store at -20°C |
| **Peptide Sequence:** | Tyr-D-Ala-Phe-Asp-Val-Val-Gly-$NH_2$ |

## 2. ANALYTICAL DATA

| | |
|---|---|
| **HPLC:** | Shows 95.4% purity |
| **Mass Spectrum:** | Consistent with structure |

## 3. AMINO ACID ANALYSIS DATA

| Amino Acid | Theoretical | Actual | Amino Acid | Theoretical | Actual |
|---|---|---|---|---|---|
| Ala | 1.00 | 0.97 | Lys | | |
| Arg | | | Met | | |
| Asx | 1.00 | 1.00 | Phe | 1.00 | 0.99 |
| Cys | | | Pro | | |
| Glx | | | Ser | | |
| Gly | 1.00 | 1.00 | Thr | | |
| His | | | Trp | | |
| Ile | | | Tyr | 1.00 | 1.04 |
| Leu | | | Val | 2.00 | 1.88 |



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**Product Name:** **Deltorphin I** **Catalog No.: 4591** **Batch No.: 2**

CAS Number: 122752-15-2

**Description:**

Potent δ-opioid receptor agonist ($IC_{50}$ = 0.5 nM in human granulocytes). Exhibits a high rate of blood-brain barrier penetrance.

**Physical and Chemical Properties:**

Batch Molecular Formula: $C_{37}H_{52}N_8O_{10}$

Batch Molecular Weight: 768.87

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Tyr-D-Ala-Phe-Asp-Val-Val-Gly-$NH_2$

**Storage:** Store at -20°C

**Solubility & Usage Info:**

Soluble to 1 mg/ml in 20% formic acid

**Net Peptide Content:** 83% (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 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:**

**Fiori** *et al* (1997) Deltorphin transport across the blood-brain barrier. Proc.Natl.Acad.Sci.USA ***94*** 9469. PMID: 9256506.

**Stefano** *et al* (1992) [D-Ala²]Deltorphin I binding and pharmacological evidence for a special subtype of δ opioid receptor on human and invertebrate immune cells. Proc.Natl.Acad.Sci.USA ***89*** 9316. PMID: 1329092.

**Erspamer** *et al* (1989) Deltorphins: a family of naturally occurring peptides with high affinity and selectivity for δ opioid binding sites. Proc.Natl.Acad.Sci.USA ***86*** 5188. PMID: 2544892.