

Certificate of Analysis

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Product Name: [D-Ala²]-Deltorphan II

Catalog No.: 1180

Batch No.: 22

CAS Number: 122752-16-3

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₃₈H₅₄N₈O₁₀
Batch Molecular Weight: 782.89
Physical Appearance: White lyophilised solid
Net Peptide Content: 81%
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in water
Storage: Desiccate at -20°C
Peptide Sequence: Tyr-D-Ala-Phe-Glu-Val-Val-Gly-NH₂

2. ANALYTICAL DATA

HPLC: Shows 95.0% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical		Actual	Amino Acid Theoretical		Actual
Ala	1.00	0.98	Lys		
Arg			Met		
Asx			Phe	1.00	1.01
Cys			Pro		
Glx	1.00	1.03	Ser		
Gly	1.00	1.00	Thr		
His			Trp		
Ile			Tyr	1.00	0.99
Leu			Val	2.00	2.00

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

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Description:

Selective peptide agonist for the δ opioid receptor. Antinociceptive in vivo.

Physical and Chemical Properties:

Batch Molecular Formula: C₃₆H₅₄N₈O₁₀

Batch Molecular Weight: 782.89

Physical Appearance: White lyophilised solid

Peptide Sequence:

Tyr-D-Ala-Phe-Glu-Val-Val-Gly-NH₂

Storage: Desiccate at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water

Net Peptide Content: 81% (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:

Sanchez-Blazquez (1998) Delta opioid receptor subtypes activate inositol-signalling pathways in the production of antinociception. *J.Pharmacol.Exp.Ther.* **285** 820. PMID: 9580632.

Thomas et al (1997) Structure-activity relationships of a series of [D-Ala²] deltorphin I and II analogues; *in vitro* blood-brain barrier permeability and stability. *J.Pharmacol.Exp.Ther.* **281** 817. PMID: 9152390.

Mattia et al (1991) Lack of antinociceptive cross-tolerance between [D-Pen², D-Pen⁵]enkephalin and [D-Ala²]deltorphin II in mice: evidence for delta receptor subtypes. *J.Pharmacol.Exp.Ther.* **258** 583. PMID: 1650835.

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