

# Certificate of Analysis

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**Product Name:** PL 017  
**CAS Number:** 83397-56-2

**Catalog No.:** 2024 **Batch No.:** 2

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>29</sub>H<sub>37</sub>N<sub>5</sub>O<sub>5</sub>  
**Batch Molecular Weight:** 535.64  
**Physical Appearance:** White lyophilised solid  
**Net Peptide Content:** 71%  
**Counter Ion:** TFA  
**Solubility:** Soluble to 1 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** Tyr-Pro-NMe-Phe-D-Pro-NH<sub>2</sub>

## 2. ANALYTICAL DATA

**HPLC:** Shows 99.6% purity  
**Mass Spectrum:** Consistent with structure

## 3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical		Actual	
Ala		Lys	
Arg		Met	
Asx		Phe	
Cys		Pro	2.00 2.01
Glx		Ser	
Gly		Thr	
His		Trp	
Ile		Tyr	1.00 0.99
Leu		Val	1.00 Detected

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

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**Description:**

Selective  $\mu$  opioid receptor agonist ( $IC_{50}$  values are 5.5 and > 10000 nM for inhibition of  $^{125}I$ -FK 33,824 and  $^{125}I$ -DADLE binding to  $\mu$  and  $\delta$  sites respectively). Produces naloxone-reversible analgesia, catalepsy and hyperthermia following central administration in rats in vivo.

**Physical and Chemical Properties:**

Batch Molecular Formula:  $C_{29}H_{37}N_5O_5$

Batch Molecular Weight: 535.64

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Tyr-Pro-NMe-Phe-D-Pro-NH<sub>2</sub>

**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:** 71% (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  $\mu$ m filter to remove potential bacterial contamination whenever possible.

**References:**

**Xin et al** (1997) Body temperature and analgesic effects of selective mu and kappa opioid receptor agonists microdialyzed into rat brain. *J.Pharmacol.Exp.Ther.* **281** 499. PMID: 9103537.

**Meyer and Meyer** (1993) Behavioral effects of the  $\mu$ -opioid peptide agonists DAMGO, DALDA and PL017 on locomotor activities. *Pharmacol.Biochem.Behav.* **46** 391. PMID: 8265694.

**Chang et al** (1983) Potent morphiceptin analogs: structure activity relationships and morphine-like activities. *J.Pharmacol.Exp.Ther.* **227** 403. PMID: 6313901.

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