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Print Date: May 19th 2022

Certificate of Analysis

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Product Name: **Endomorphin-1** **Catalog No.: 1055** **Batch No.: 17**

CAS Number: 189388-22-5

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	$C_{34}H_{38}N_6O_5$
Batch Molecular Weight:	610.67
Physical Appearance:	White lyophilised solid
Counter Ion:	TFA
Solubility:	Soluble to 0.60 mg/ml in water
Storage:	Store at -20°C
Peptide Sequence:	Tyr-Pro-Trp-Phe-NH_2

2. ANALYTICAL DATA

HPLC:	Shows 99.8% 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	1.00	1.00
Glx			Ser		
Gly			Thr		
His			Trp	1.00	0.51
Ile			Tyr	1.00	1.00
Leu			Val		

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Product Name: **Endomorphin-1** **Catalog No.: 1055** **Batch No.: 17**

CAS Number: 189388-22-5

Description:

Endomorphin-1 is a endogenous peptide with an exceptionally high affinity (K_i = 360 pM) and selectivity for μ opioid receptors (4000- and 15000-fold preference over δ and κ respectively).

Physical and Chemical Properties:

Batch Molecular Formula: $C_{34}H_{38}N_6O_5$

Batch Molecular Weight: 610.67

Physical Appearance: White lyophilised solid

Peptide Sequence:

Tyr-Pro-Trp-Phe-NH_2

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 0.60 mg/ml in 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:

Goldberg *et al* (1998) Pharmacological characterization of endomorphin-1 and endomorphin-2 in mouse brain. J.Pharmacol.Exp.Ther. ***286*** 1007. PMID: 9694962.

Harrison *et al* (1998) Differential effects of endomorphin-1, endomorphin-2, and tyr-W-MIF-1 on activation of G-proteins in SH-SY5Y human neuroblastoma membranes. Peptides ***19*** 749. PMID: 9622031.

Kakizawa *et al* (1998) Parallel stimulations of in vitro and in situ [^{35}S]GTPγS binding by endomorphin 1 and DAMGO in mouse brains. Peptides ***19*** 755. PMID: 9622032.