# 1. PHYSICAL AND CHEMICAL PROPERTIES

- **Batch Molecular Formula:** C\textsubscript{34}H\textsubscript{38}N\textsubscript{6}O\textsubscript{5}
- **Batch Molecular Weight:** 610.67
- **Physical Appearance:** White lyophilised solid
- **Net Peptide Content:** 72%
- **Counter Ion:** TFA
- **Solubility:** Soluble to 0.60 mg/ml in water
- **Storage:** Desiccate at -20°C
- **Peptide Sequence:** Tyr-Pro-Trp-Phe-NH\textsubscript{2}

# 2. ANALYTICAL DATA

- **HPLC:** Shows 97.2% purity
- **Mass Spectrum:** Consistent with structure

# 3. AMINO ACID ANALYSIS DATA

<table>
<thead>
<tr>
<th>Amino Acid</th>
<th>Theoretical</th>
<th>Actual</th>
<th>Amino Acid</th>
<th>Theoretical</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ala</td>
<td></td>
<td></td>
<td>Lys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arg</td>
<td></td>
<td></td>
<td>Met</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asx</td>
<td></td>
<td></td>
<td>Phe</td>
<td>1.00</td>
<td>1.01</td>
</tr>
<tr>
<td>Cys</td>
<td></td>
<td></td>
<td>Pro</td>
<td>1.00</td>
<td>0.99</td>
</tr>
<tr>
<td>Gix</td>
<td></td>
<td></td>
<td>Ser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gly</td>
<td></td>
<td></td>
<td>Thr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>His</td>
<td></td>
<td></td>
<td>Trp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ile</td>
<td></td>
<td></td>
<td>Tyr</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Leu</td>
<td></td>
<td></td>
<td>Val</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Product Name: Endomorphin-1
CAS Number: 189388-22-5

Description:
Endogenous peptide with an exceptionally high affinity (Kᵢ = 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: C₃₄H₃₃N₃O₅
Batch Molecular Weight: 610.67
Physical Appearance: White lyophilised solid

Peptide Sequence:
Tyr-Pro-Trp-Phe-NH₂

Storage: Desiccate at -20°C

Solubility & Usage Info:
Soluble to 0.60 mg/ml in water

Net Peptide Content: 72% (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: