

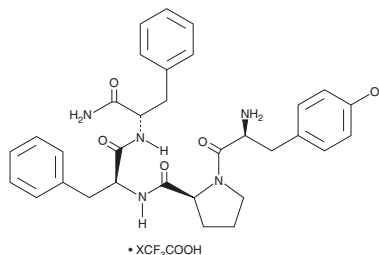
PRODUCT INFORMATION



Endomorphin 2 (trifluoroacetate salt)

Item No. 23281

Formal Name: L-tyrosyl-L-prolyl-L-phenylalanyl-L-phenylalaninamide, trifluoroacetate salt
Synonym: Tyr-Pro-Phe-Phe-NH₂
MF: C₃₂H₃₇N₅O₅ • XCF₃COOH
FW: 571.7
Purity: ≥95%
Supplied as: A lyophilized powder
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Endomorphin 2 (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the endomorphin 2 (trifluoroacetate salt) in water. The solubility of endomorphin 2 (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Endomorphin 2 is an endogenous neuropeptide and μ -opioid receptor agonist ($K_i = 0.69$ nM) that has analgesic, negative reinforcing, and gastrointestinal properties.^{1,2} It is found in the spinal cord and, to a lesser extent, in the brain.³ It is selective for μ - over δ - and κ -opioid receptors ($K_s = 9,233$ and $5,240$ nM, respectively).¹ Endomorphin 2 also binds to mouse brain membranes and rat recombinant μ -opioid receptors expressed in CHO cells ($K_s = 1.37$ and 0.58 nM, respectively).² It inhibits cAMP accumulation induced by forskolin in CHO cells expressing rat recombinant μ -opioid receptors and in SH-SY5Y human neuroblastoma cells ($IC_{50}s = 7.08$ and 7.76 nM, respectively).⁴ In mice, endomorphin 2 increases analgesia in a radiant heat tail-flick assay in mice following intracerebroventricular (i.c.v.) or intrathecal administration ($ED_{50}s = 1.99$ and 3.81 μ g, respectively) and induces conditioned place aversion when administered intracerebroventricularly at a dose of 10 μ g.² It also decreases gastrointestinal transit time in mice when administered intracerebroventricularly at a dose of 3 μ g.²

References

1. Zadina, J.E., Hackler, L., Ge, L.J., *et al.* A potent and selective endogenous agonist for the μ -opioid receptor. *Nature* **386(6624)**, 499-502 (1997).
2. Goldberg, I.E., Rossi, G.C., Letchworth, S.R., *et al.* Pharmacological characterization of endomorphin-1 and endomorphin-2 in mouse brain. *J. Pharmacol. Exp. Ther.* **286(2)**, 1007-1013 (1998).
3. Martin-Schild, S., Gerall, A.A., Kastin, A.J., *et al.* Differential distribution of endomorphin 1- and endomorphin 2-like immunoreactivities in the CNS of the rodent. *J. Comp. Neurol.* **405(4)**, 450-471 (1999).
4. Harrison, C., McNulty, S., Smart, D., *et al.* The effects of endomorphin-1 and endomorphin-2 in CHO cells expressing recombinant μ -opioid receptors and SH-SY5Y cells. *Br. J. Pharmacol.* **128(2)**, 472-478 (1999).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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