

PRODUCT INFORMATION



Met-Enkephalin (trifluoroacetate salt)

Item No. 23284

Formal Name: L-tyrosylglycylglycyl-L-phenylalanyl-L-methionine, trifluoroacetate salt

Synonyms: [Met⁵]-Enkephalin, Methionine-Enkephalin

MF: C₂₇H₃₅N₅O₇S • XCF₃COOH

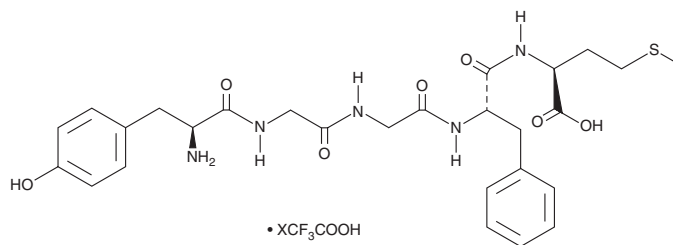
FW: 573.7

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

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

Description

Met-Enkephalin is an endogenous neuropeptide involved in nociception and an agonist of δ - and μ -opioid receptors (K_i s = 0.65 and 1.7 nM, respectively).^{1,2} It is selective for δ - and μ - over κ -opioid receptors (K_i = >1,000 nM).² Met-Enkephalin is a cleavage product of proenkephalin, which is found primarily in the adrenal medulla and the CNS.³ Met-Enkephalin is found in the brain, primarily in the globus pallidus, nucleus accumbens, and substantia nigra, the brainstem, and the spinal cord as well as in the peripheral nervous system.^{3,4} Met-Enkephalin has antinociceptive effects in mouse models of acute pain, including tail pressure, hot plate tail-flick, and acetic acid-induced writhing tests (ED_{50} s = 170, 140, and 88 nmol/animal, respectively).⁵ Levels of Met-enkephalin are increased at the site of inflammation in a complete Freund's adjuvant mouse model of chronic inflammatory pain.⁶

References

1. Hughes, J., Smith, T.W., Kosterlitz, H.W., *et al.* Identification of two related pentapeptides from the brain with potent opiate agonist activity. *Nature* **258**(5536), 577-580 (1975).
2. Raynor, K., Kong, H., Chen, Y., *et al.* Pharmacological characterization of the cloned κ -, δ -, and μ -opioid receptors. *Mol. Pharm.* **45**(2), 330-334 (1994).
3. Roques, B.P., Noble, F., and Fournié-Zaluski, M.-C. Opioids in pain control: Basic and clinical aspects. 22-25, Cambridge, UK: Cambridge University Press (1999).
4. Emson, P.C., Arregui, A., Clement-Jones, V., *et al.* Regional distribution of methionine-enkephalin and substance P-like immunoreactivity in normal human brain and in Huntington's disease. *Brain Res.* **199**(1), 147-160 (1980).
5. Sakurada, T., Sakurada, S., Watanabe, S., *et al.* Comparison of the antinociceptive effects of intracerebroventricular injection of kyotorphin, cyclo (N-methyl-Tyr-Arg) and Met-enkephalin in mice. *Neuropharmacology* **23**(1), 7-12 (1984).
6. Jiang, Y.-L., He, X.-F., Shen, Y.-F., *et al.* Analgesic roles of peripheral intrinsic met-enkephalin and dynorphin A in long-lasting inflammatory pain induced by complete Freund's adjuvant in rats. *Exp. Ther. Med.* **9**(6), 2344-2348 (2015).

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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