

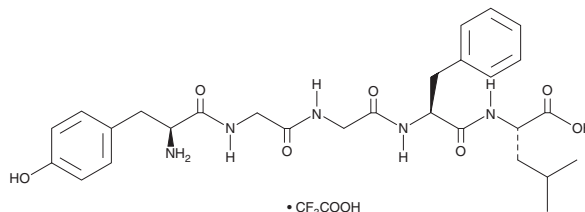
# PRODUCT INFORMATION



## Leu-Enkephalin (trifluoroacetate salt)

Item No. 23283

**CAS Registry No.:** 73563-78-7  
**Formal Name:** L-tyrosylglycylglycyl-L-phenylalanyl-L-leucine, monotrifluoroacetate salt  
**Synonyms:** Leucine enkephalin, [Leu<sup>5</sup>]enkephalin, Tyr-Gly-Gly-Phe-Leu-OH  
**MF:** C<sub>28</sub>H<sub>37</sub>N<sub>5</sub>O<sub>7</sub> • CF<sub>3</sub>COOH  
**FW:** 669.7  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 279 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Leu-enkephalin (trifluoroacetate salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the leu-enkephalin (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. Leu-enkephalin (trifluoroacetate salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of leu-enkephalin (trifluoroacetate salt) in these solvents is approximately 25 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of leu-enkephalin (trifluoroacetate salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of leu-enkephalin (trifluoroacetate salt) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Leu-enkephalin is an endogenous neuropeptide involved in nociception and an agonist of δ- and μ-opioid receptors (K<sub>i</sub>s = 4.0 and 3.4 nM, respectively).<sup>1,2</sup> It is selective for δ- and μ- over κ-opioid receptors (K<sub>i</sub> = >1,000 nM).<sup>2</sup> Leu-enkephalin is a cleavage product of proenkephalin, which is found primarily in the adrenal medulla and the CNS.<sup>3</sup> It is found in the brain, the brainstem, and the spinal cord as well as in the peripheral nervous system. Leu-enkephalin (1 mg/kg) decreases the visceromotor response to colon distension in a mouse model of visceral pain induced by colorectal distension.<sup>4</sup> It also increases the tail-flick threshold and latency to tail flick in the tail-pressure test and tail-flick test, respectively, in mice.<sup>5</sup>

### References

1. Hughes, J., Smith, T.W., Kosterlitz, H.W., et al. *Nature* **258**(5536), 577-580 (1975).
2. Raynor, K., Kong, H., Chen, Y., et al. *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*. Stein, C., editor, Cambridge Univ. Press (1999).
4. Fabisiak, A., Sobocińska, M., Kamysz, E., et al. *Chem. Biol. Drug Des.* **92**(1), 1387-1392 (2018).
5. Honda, M., Okutsu, H.M., T., Miyagi, T., et al. *Jpn. J. Pharmacol.* **87**(4), 261-267 (2001).

#### 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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