PRODUCT INFORMATION

Adrenorphin (human, mouse, rat, bovine) (trifluoroacetate salt)

Item No. 35826

Formal Name: L-tyrosylglycylglycyl-L-phenylalanyl-L-methionyl-L-arginyl-L-arginyl-L-valinamide, trifluoroacetate salt

Synonyms: Met^5-Enkephalin-Arg^6-Arg^7-Val^8-NH_2, Metorphamide, Tyr-Gly-Gly-Phe-Met-Arg-Arg-Val-NH_2

Peptide Sequence: YGGFMRRV-NH_2

MF: $C_{44}H_{69}N_{15}O_9 \bullet XCF_3COOH$

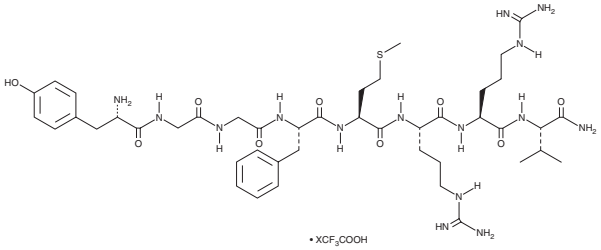
FW: 952.1

Purity: ≥98%

Supplied as: A 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

Adrenorphin (human, mouse, rat, bovine) (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the adrenorphin (human, mouse, rat, bovine) (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. Adrenorphin (human, mouse, rat, bovine) (trifluoroacetate salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of adrenorphin (human, mouse, rat, bovine) (trifluoroacetate salt) in these solvents is approximately 30 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 adrenorphin (human, mouse, rat, bovine) (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of adrenorphin (human, mouse, rat, bovine) (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

Adrenorphin is an octapeptide agonist of μ-opioid receptors that is involved in nociception.[1,2] It is a C-terminally amidated cleavage product corresponding to amino acids 210-218 of human proenkephalin A. It was originally found in a human pheochromocytoma but has also been found in the rat adrenal medulla and the rat olfactory bulb, hypothalamus, and striatum, among other brain regions.[1,3,4] Adrenorphin selectively binds to μ-opioid receptors over κ- and δ-opioid receptors (K_is = 0.12, 0.248, and 2.65 nM, respectively, in a radioligand binding assay).[1] Intracerebroventricular administration of adrenorphin (6.1 nmol/animal) increases the latency to paw licking in the hot plate test in mice, indicating analgesic activity, an effect that can be reduced by the non-selective opioid receptor antagonist naloxone.[2] It also induces respiratory depression in mice and rabbits (ED_{50}s = 6 and 71.1 nmol/animal, respectively).

References

1. Weber, E., Esch, F.S., Bohlen, P., *et al. Proc. Natl. Acad. Sci. USA* **80(23)**, 7362-7366 (1983).
2. Xu, S.F., Lu, W.X., Zhou, K.R., *et al. Neuropeptides* **6(2)**, 121-131 (1985).
3. Miyata, A., Mizuno, K., Honzawa, M., *et al. Neuropeptides* **5(4-6)**, 517-520 (1985).
4. Zamir, N., Weber, E., Palkovits, M., *et al. Brain Res.* **361(1-2)**, 193-199 (1985).

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