

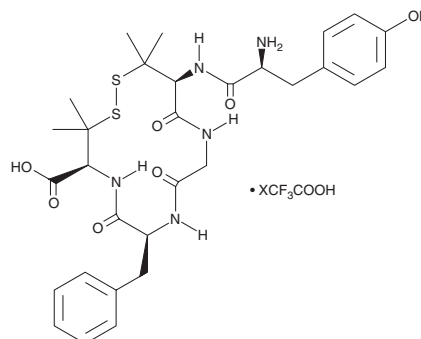
PRODUCT INFORMATION



DPDPE (trifluoroacetate salt)

Item No. 23184

Formal Name: L-tyrosyl-3-mercapto-D-valylglycyl-L-phenylalanyl-3-mercapto-D-valine, cyclic (2→5)-disulfide, trifluoroacetate salt
Synonym: [D-Pen²,D-Pen⁵]Enkephalin
MF: C₃₀H₃₉N₅O₇S₂ • XCF₃COOH
FW: 645.8
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

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

Description

DPDPE is a synthetic enkephalin peptide and an agonist of δ_1 -opioid receptors ($K_i = 2.7$ nM for the rat receptors).¹ It is selective for δ -opioid receptors over μ - and κ -opioid receptors ($K_{i,s} = 713$ and $>1,500$ nM, respectively, for the rat receptors). *In vivo*, DPDPE (4.5 nmol i.c.v.) increases the latency to tail withdrawal in the tail flick test in mice, an effect that can be reversed by the δ_1 -opioid receptor antagonist [D-Ala²,Leu⁵,Cys⁶]enkephalin (DALCE) but not the δ_2 -opioid receptor antagonist natriindole-5'-isocynate.^{1,2} DPDPE (140 nmol, i.c.v.) increases the seizure threshold in a rat model of flurothyl-induced seizures and is protective against seizures induced by maximal electroshock (MES) in rats.³ It reduces formalin-induced paw licking in rats in a dose-dependent manner.⁴ *In vivo*, DPDPE (15 μ g, i.c.v.) increases latency to tail withdrawal in wild-type, δ -opioid receptor knockout (*DOR*^{-/-}), and μ -opioid receptor knockout (*MOR*^{-/-}) mice, but the latter effect can be prevented by the μ -opioid receptor antagonist CTOP (Item No. 27377).⁵

References

1. Corbett, A.D., Gillan, M.G.C., Kosterlitz, H.W., *et al.* Selectivities of opioid peptide analogues as agonists and antagonists at the δ -receptor. *Br. J. Pharmacol.* **83**(1), 271-279 (1984).
2. Vanderah, T., Takemori, A.E., Sultana, M., *et al.* Interaction of [D-Pen²,D-Pen⁵]enkephalin and [D-Ala²,Glu⁴]deltorphin with δ -opioid receptor subtypes *in vivo*. *Eur. J. Pharmacol.* **252**(2), 133-137 (1994).
3. Tortella, F.C., Echevarria, E., Robles, L., *et al.* Anticonvulsant effects of mu (DAGO) and delta (DPDPE) enkephalins in rats. *Peptides* **9**(5), 1177-1181 (1988).
4. Calcagnetti, D.J., Helmstetter, F.J., and Fanselow, M.S. Analgesia produced by centrally administered DAGO, DPDPE and U50488H in the formalin test. *Eur. J. Pharmacol.* **153**(1), 117-122 (1988).
5. Scherrer, G., Befort, K., Contet, C., *et al.* The delta agonists DPDPE and deltorphin II recruit predominantly mu receptors to produce thermal analgesia: A parallel study of mu, delta and combinatorial opioid receptor knockout mice. *Eur. J. Neurosci.* **19**(8), 2239-2248 (2004).

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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