

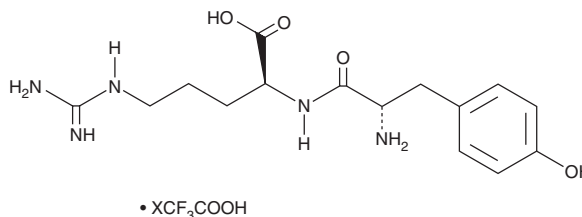
PRODUCT INFORMATION



Kyotorphin (trifluoroacetate salt)

Item No. 45683

Formal Name: L-tyrosyl-L-arginine
Synonyms: Kiotorphin, KTP, Tyr-Arg-OH, L-Tyr-L-Arg-OH
Peptide Sequence: YR-OH
MF: C₁₅H₂₃N₅O₄ • XCF₃COOH
FW: 337.4
Purity: ≥95%
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

Kyotorphin (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the kyotorphin (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. Kyotorphin (trifluoroacetate salt) is sparingly soluble (1-10 mg/ml) in DMSO and slightly soluble (0.1-1 mg/ml) in ethanol.

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 kyotorphin (trifluoroacetate salt) can be prepared by directly dissolving the solid in aqueous buffers. Kyotorphin (trifluoroacetate salt) is sparingly soluble (1-10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

Kyotorphin is an endogenous analgesic neuropeptide found in mammalian brain and cerebrospinal fluid (CSF).¹ It binds to the kyotorphin receptor with K_d values of 0.34 and 9.07 nM for the high- and low-affinity binding sites, respectively, in rat brain membranes.² Kyotorphin (10 μM) induces the release of Met-enkephalin (Item No. 23284) in guinea pig striatal slices.³ It increases nitrite production and inducible nitric oxide synthase (iNOS) levels in LPS-induced primary rat glial cells.⁴ Kyotorphin increases the reaction latency in the tail pressure test in mice (ED₅₀ = 393.7 nmol/animal), an effect that can be reversed by naloxone.⁵

References

1. Ueda, H. Review of kyotorphin research: A mysterious opioid analgesic dipeptide and its molecular, physiological, and pharmacological characteristics. *Front. Med. Technol.* **3:662697**, (2021).
2. Ueda, H., Yoshihara, Y., Misawa, H., et al. The kyotorphin (tyrosine-arginine) receptor and a selective reconstitution with purified G_p, measured with GTPase and phospholipase C assays. *J. Biol. Chem.* **264(7)**, 3732-3741 (1989).
3. Shiomi, H., Kuraishi, Y., Ueda, H., et al. Mechanism of kyotorphin-induced release of Met-enkephalin from guinea pig striatum and spinal cord. *Brain Res.* **221(1)**, 161-169 (1981).
4. Arima, T., Kitamura, Y., Nishiya, T., et al. Kyotorphin (L-tyrosyl-L-arginine) as a possible substrate for inducible nitric oxide synthase in rat glial cells. *Neurosci. Lett.* **212(1)**, 1-4 (1996).
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).

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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