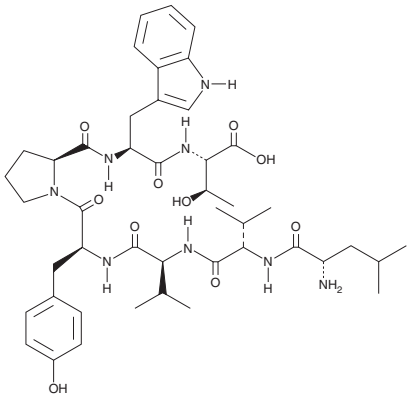
PRODUCT INFORMATION

Spinorphin

Item No. 29914



CAS Registry No.:	137201-62-8
Formal Name:	L-leucyl-L-valyl-L-valyl-L-tyrosyl-L-prolyl-L-tryptophyl-L-threonine
Synonyms:	Leu-Val-Val-Tyr-Pro-Trp-Thr, LVVYPWT
MF:	$C_{45}H_{64}N_8O_{10}$
FW:	877.0
Purity:	≥95%
UV/Vis.:	λ_{max}: 222 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

Spinorphin is supplied as a crystalline solid. A stock solution may be made by dissolving the spinorphin in the solvent of choice, which should be purged with an inert gas. Spinorphin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of spinorphin in these solvents is approximately 30 mg/ml.

Description

Spinorphin is a heptapeptide inhibitor of the enkephalin-degrading enzymes aminopeptidase, dipeptidyl aminopeptidase, angiotensin-converting enzyme (ACE), and enkephalinase (IC_{50}s = 3.3, 1.4, 2.4, and 10 µg/ml, respectively, for monkey brain enzymes).[1] It is selective for these enzymes over human serum aminopeptidase A (IC_{50} = >100 µg/ml), as well as porcine kidney aminopeptidase B, aminopeptidase M, dipeptidyl peptidase 1 (DPP-1), DPP-2, DPP-3, and DPP-4 (IC_{50}s = >55 µg/ml for all). Spinorphin inhibits chemotaxis, production of reactive oxygen species (ROS), and exocytosis of glucuronidase and collagenase in polymorphonuclear neutrophils (PMNs). It potentiates enkephalin-induced action potentials in rat hippocampal slices. Spinorphin (5 µg/animal) enhances the antinociceptive effects of Leu-enkephalin (Item No. 23283) in mice.[2]

References

1. Yamamoto, Y., Ono, H., Ueda, A., *et al.* Spinorphin as an endogenous inhibitor of enkephalin-degrading enzymes: Roles in pain and inflammation. *Curr. Protein Pept. Sci.* **3(6)**, 587-599 (2002).
2. Honda, M., Okutsu, H., Matsuura, T., *et al.* Spinorphin, an endogenous inhibitor of enkephalin-degrading enzymes, potentiates leu-enkephalin-induced anti-allodynic and antinociceptive effects in mice. *Jpn. J. Pharmacol.* **87(4)**, 261-267 (2001).

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