Product Data Sheet

Product Name: Deltorphin I
Cat. No.: GC12143

Chemical Properties

Cas. No.	122752-15-2
Chemical Name	(S)-4-(((S)-1-(((S)-1-((2-amino-2-oxoethyl)amino)-3-methyl-1-oxobutan-2-yl)amino)-3-methyl-1-oxobutan-2-yl)amino)-3-((S)-2-((R)-2-((S)-2-amino-3-(4-hydroxyphenyl)propanamido)propanamido)-3-phenylpropanamido)-4-oxobutanoic acid
SMILES	O=C([C@H](C(C)C)NC([C@H](CC(O)=O)NC([C@H](CC1=CC=CC=C1)NC([C@@H](C)NC([C@H](CC(C=C2)=CC=C2O)N)=O)=O)=O)=O)N[C@H](C(NCC(N)=O)=O)C(C)C
Formula	$C_{37}H_{52}N_8O_{10}$
M.Wt	768.87
Solubility	Soluble to 1 mg/ml in 20% formic acid
Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.
Structure	Deltorphin I

Protocol

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Animal experiment:

Mice[1]Male Kunming mice (20.0±1.0 g) are used. In order to investigate the chronic effect of Melatonin on opioid receptor agonist analgesia, 18, 17, 16 and 21 mice are treated with Melatonin (0, 0.5, 1 and 2.5 mg/kg, respectively) twice daily for 4 days. On the 5th day, 8, 8, 8 and 9 mice are administered with Endomorphin-1 18 μg/mouse (corresponding to 0, 0.5, 1 and 2.5 mg/kg Melatonin, respectively), while 10, 9, 8 and 12 mice are administered with Deltorphin I 20 μg/mouse (corresponding to 0, 0.5, 1 and 2.5 mg/kg Melatonin, respectively). Subsequently tail-flick latency is measured at 10 min interval within 60 min[1].

References:

[1]. Dai X, et al. Melatonin attenuates the development of antinociceptive tolerance to delta-, but not to mu-opioid receptor agonist in mice. Behav Brain Res. 2007 Aug 22;182(1):21-7.

Background

Deltorphin I is a δ-opioid receptor agonist with high affinity and selectivity.

Twice daily administration of Deltorphin I (20μg/mouse) for 4 days produces tolerance to Deltorphin I analgesia, as shown by the decrease in the analgesic response. The peak analgesic response to Deltorphin I (20 μg/mouse) at 10 min after injections is decreased from 8.36±0.28 s (the 1st day) to 4.53±0.14 s (the 4th day) markedly. Concurrent

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treatment of Melatonin (0.5, 1 and 2.5 mg/kg) and Deltorphin I (20 μg/mouse) twice daily for 4 days can attenuate the tolerance to Deltorphin I analgesia (P<0.05, <0.05 and <0.05), and this effect is dose dependent[1].

References:

[1]. Dai X, et al. Melatonin attenuates the development of antinociceptive tolerance to delta-, but not to mu-opioid receptor agonist in mice. Behav Brain Res. 2007 Aug 22;182(1):21-7.