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DATASHEET

Orexin A (human, rat, mouse)

Product overview

Name	Orexin A (human, rat, mouse)
Cat No	HB2937
Biological description	Overview

Excitatory neuropeptide at orexin receptors (K_i values are 20 and 38 nM for OX₁ and OX₂ receptors respectively).

Orexin-A is synthesized by a cluster of neurons in the lateral hypothalamus and perifornical area. Orexin A is composed of 33 amino acids.

Uses and applications

The peptide is involved in a variety of physiological functions. E.g. feeding behavior, sleep/wake rhythms, thermoregulation, energy metabolism and cardiovascular activity. More recently orexins have been suggested to have a role in emotional regulation, energetic homeostasis, reward mechanisms, drug addiction, arousal system, sleep and wakefulness.

Biological action	Peptide
Purity	>95%
Description	Excitatory neuropeptide at orexin OX ₁ /OX ₂ receptors

Solubility & Handling

Storage instructions	-20°C
Solubility overview	Soluble in water (1 mg/ml)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

Chemical Data

Chemical name	XPLPDCCRQKTCSCRLYELLHGAGNHAAGILTL (modifications: C-terminal amide; X-1 = Glp; Disulfide bonds: 6-12, 7-14)
Molecular Weight	3561.12
Chemical structure	
Molecular Formula	C ₁₅₂ H ₂₄₃ N ₄₇ O ₄₄ S ₄
Sequence (one letter)	XPLPDCCRQKTCSCRLYELLHGAGNHAAGILTL
Modifications	C-terminal amide; X-1 = Glp; Disulfide bonds: 6-12, 7-14
CAS Number	205640-90-0
PubChem identifier	56842143
SMILES	CC[C@H](C)[C@@H](C(=O)N[C@@H](CC(C)C)C(=O)N[C@@H]([C@@H](C)O)C(=O)N[C@@H](CC(C)C)C(=O)N[C@@H](CNC(=O)[C@H](C)NC(=O)[C@H](C)NC(=O)[C@H](CC1=CN=CN1)NC(=O)[C@H](CC(=O)N)NC(=O)CNC(=O)[C@H](C)NC(=O)CNC(=O)[C@H](CC2=CN=CN2)NC(=O)[C@H](CC(C)C)NC(=O)[C@H](CC(C)C)NC(=O)[C@H](CCC(=O)O)NC(=O)[C@H](CC3=CC=C(C=C3)O)NC(=O)[C@H](CC(C)C)NC(=O)[C@H](CCCNC(=N)N)NC(=O)[C@@H]4CSSC[C@H]5C(=O)N[C@@H](C(=O)N[C@H](C(=O)N[C@H](C(=O)N[C@H](C(=O)N[C@@H](C)C(=O)N[C@@H](C)C(=O)N8)C(=O)N[C@H](C(=O)N4)CO)[C@@H](C)O)CCCCN)CCC(=O)N)CCCNC(=N)N
InChiKey	OFNHNCUVYOTPM-IIIOAANCSCA-N

References

Orexin/hypocretin: a neuropeptide at the interface of sleep, energy homeostasis, and reward system.

Tsujino et al (2009) Pharmacol Rev 61(2)

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Orexin-A controls sympathetic activity and eating behavior.

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