

Orexin B, rat, mouse

Cat. No.:	HY-P1349
CAS No.:	202801-92-1
Molecular Formula:	C ₁₂₆ H ₂₁₅ N ₄₅ O ₃₄ S
Molecular Weight:	2936.4
Sequence:	Arg-Pro-Gly-Pro-Pro-Gly-Leu-Gln-Gly-Arg-Leu-Gln-Arg-Leu-Leu-Gln-Ala-Asn-Gly-Asn-H is-Ala-Ala-Gly-Ile-Leu-Thr-Met-NH ₂
Sequence Shortening:	RPGPPGLQGRLQRLQANGNHAAGILTM-NH ₂
Target:	Orexin Receptor (OX Receptor)
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Sealed storage, away from moisture
	Powder -80°C 2 years -20°C 1 year
	* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

SOLVENT & SOLUBILITY

In Vitro	H ₂ O : 16.67 mg/mL (5.68 mM; Need ultrasonic)					
	Preparing Stock Solutions	<div><div>Solvent</div><div>Concentration</div></div>	Mass	1 mg	5 mg	10 mg
		1 mM	0.3406 mL	1.7028 mL	3.4055 mL	
		5 mM	0.0681 mL	0.3406 mL	0.6811 mL	
		10 mM	---	---	---	
Please refer to the solubility information to select the appropriate solvent.						

BIOLOGICAL ACTIVITY

Description	Orexin B, rat, mouse (Rat orexin B) is an endogenous agonist at Orexin receptor with K _i s of 420 and 36 nM for OX1 and OX2, respectively.
IC ₅₀ & Target	Ki: 420 nM (OX1), 36 nM (OX2) ^[1]
In Vitro	OX2 receptor is indeed a high-affinity receptor for human orexin B, with an IC ₅₀ of 36 nM in the binding assay and an EC ₅₀ of 60 nM in the [Ca ²⁺] _i transient assay. Human Orexin B has significantly lower affinity for the human OX1: the calculated IC ₅₀ in the competitive binding assay and the EC ₅₀ in the [Ca ²⁺] _i transient assay are 420 nM and 2500 nM for human orexin-B, respectively ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Orexin-B modulates the activity of rod bipolar cells (RBCs) located in the outer retina of rat. Intravitreal injection of orexin-B

increased the amplitude of the scotopic electroretinographic b-wave, a reflection of RBC activity, recorded in vivo^[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration ^[2]

Rats^[2]

3 nM and 30 nM of synthetic human Orexin B is administered in a 5 mL bolus through a catheter placed in the left lateral ventricle of Male Wistar rats (180–200 g) in early light phase. Cumulative food consumption is observed and plotted over the period of 4 hr after injection^[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Smart D, et al. Orexins: a new family of neuropeptides. *Br J Anaesth*. 1999 Nov;83(5):695-7.
- [2]. Sakurai T, et al. Orexins and orexin receptors: a family of hypothalamic neuropeptides and G protein-coupled receptors that regulate feeding behavior. *Cell*. 1998 Feb 20;92(4):573-85.
- [3]. Ziolkowska A, et al. Orexin B inhibits proliferation and stimulates specialized function of cultured rat calvarial osteoblast-like cells. *Int J Mol Med*. 2008;22(6):749-755.
- [4]. Zhang G, et al. Orexin-B modulates synaptic transmission of rod bipolar cells in rat retina. *Neuropharmacology*. 2018;133:38-50.

Caution: Product has not been fully validated for medical applications. For research use only.

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