

Orexin B, human

Cat. No.:	HY-P1339
CAS No.:	205640-91-1
Molecular Formula:	C ₁₂₃ H ₂₁₂ N ₄₄ O ₃₅ S
Molecular Weight:	2899.34
Sequence:	Arg-Ser-Gly-Pro-Pro-Gly-Leu-Gln-Gly-Arg-Leu-Gln-Arg-Leu-Leu-Gln-Ala-Ser-Gly-Asn-His-Ala-Ala-Gly-Ile-Leu-Thr-Met-NH ₂
Sequence Shortening:	RSGPPGLQRLQRLQLQASGNHAAGILTM-NH ₂
Target:	Orexin Receptor (OX Receptor)
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	Orexin B, human is an endogenous agonist at Orexin receptor with K _i s of 420 and 36 nM for OX1 and OX2, respectively.
IC₅₀ & Target	Ki: 420 nM (OX1), 36 nM (OX2) ^[1]
In Vitro	Orexin B is derived by proteolytic amino acid precursor, prepro-orexin, which is encoded by a gene localized to chromosome 17q21 in humans. In radioligand binding studies, Orexin B has a higher affinity for the OX2 receptor ^[1] . Human Orexin B has two amino acid substitutions when compared with the rodent sequence. 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	Human Orexin B significantly augments food intake; at the 2 hr time point, 5- and 12-fold stimulation of food consumption is observed by 3 nM and 30 nM orexin-B, respectively ^[2] . 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.
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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.

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

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