Orexin B, rat, mouse TFA

Cat. No.: HY-P1349A

Molecular Formula: $C_{128}H_{216}F_3N_{45}O_{36}S$

Molecular Weight: 3050.42

Sequence Shortening: RPGPPGLQGRLQRLLQANGNHAAGILTM-NH2

RPGPPGLQGRLQRLLQANGNHAAGILTM-NH_2 (TFA salt)

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_2O : 100 mg/mL (32.78 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.3278 mL	1.6391 mL	3.2782 mL
5 mM	0.0656 mL	0.3278 mL	0.6556 mL
10 mM	0.0328 mL	0.1639 mL	0.3278 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Orexin B, rat, mouse (Rat orexin B) TFA is an endogenous orexin receptor agonist. Orexin B, rat, mouse TFA binds and activates two closely related orphan G protein-coupled receptors OX1-R and OX2-R. Orexin B, rat, mouse TFA stimulates food intake and energy expenditure and plays a significant role in sleep-wakefulness regulation[1][2][3].

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].

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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.

[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.

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