Carbetocin

Cat. No.: HY-17573

CAS No.: 37025-55-1

Molecular Formula: $C_{45}H_{69}N_{11}O_{12}S$

Molecular Weight: 988.16

Target: Oxytocin Receptor

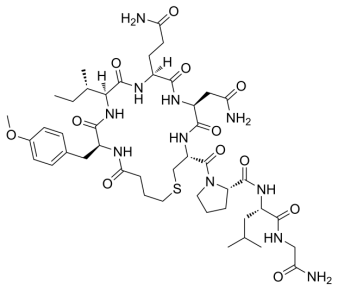
Pathway: GPCR/G Protein

Storage: Sealed storage, away from moisture and light, under nitrogen

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 33.33 mg/mL (33.73 mM)

DMSO : ≥ 31 mg/mL (31.37 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.0120 mL	5.0599 mL	10.1198 mL
5 mM	0.2024 mL	1.0120 mL	2.0240 mL
10 mM	0.1012 mL	0.5060 mL	1.0120 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (2.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (2.53 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Carbetocin, an oxytocin (OT) analogue, is an oxytocin receptor agonist with a K_i of 7.1 nM. Carbetocin has high affinity to chimeric N-terminus (E1) of the oxytocin receptor (K_i=1.17 μM). Carbetocin has the potential for postpartum hemorrhage research. Carbetocin can crosse the blood-brain barrier and produces antidepressant-like activity via activation of oxytocin receptors in the CNS[1][2][3].

In Vitro	Carbetocin is an agonist with about 10-fold lower affinity for the oxytocin receptor but with significantly higher stability and a longer duration of action. Carbetocin has higher affinity to the chimeric E1 receptor and especially to each of the combinations of E1 with the other extracellular domains, i.e. chimeric receptors E13 (K_i=13 nM), E123 (K_i=56 nM), and E1234 (K_i=37 nM)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Carbetocin (2-20 mg/kg; i.p.) has a significant effect of treatment on the percent time spent climbing, swimming and immobile[1]. Carbetocin (1, 10,100 μg/rat, i.c.v.) reveals a dose-dependent increase in the percent time spent swimming and a corresponding reduction in immobility following acute administration of 100 μg/rat[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague-Dawley rats weighing between 300 and 500 g[1]
Dosage:	2, 6.4, 20 mg/kg
Administration:	IP; single dose
Result:	Increased climbing with 6.4 mg/kg and resulted in a significantly greater proportion of time spent swimming with 20 mg/kg.

CUSTOMER VALIDATION

- Neuropharmacology. 2023 May 8;109576.

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REFERENCES

[1]. Stella Chaviaras, et al. Assessing the antidepressant-like effects of carbetocin, an oxytocin agonist, using a modification of the forced swimming test. Psychopharmacology (Berl). 2010 May;210(1):35-43.

[2]. Gerald Gimpl, et al. Binding domains of the oxytocin receptor for the selective oxytocin receptor antagonist barusiban in comparison to the agonists oxytocin and carbetocin. Eur J Pharmacol. 2005 Mar 7;510(1-2):9-16.

[3]. David Feifel, et al. The effects of oxytocin and its analog, carbetocin, on genetic deficits in sensorimotor gating. Eur Neuropsychopharmacol. 2012 May;22(5):374-8.

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