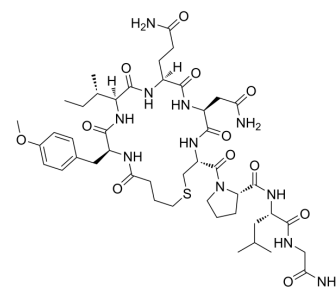


## Carbetocin

Cat. No.:	HY-17573
CAS No.:	37025-55-1
Molecular Formula:	C <sub>45</sub> H <sub>69</sub> N <sub>11</sub> O <sub>12</sub> 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<sub>2</sub>O : ≥ 33.33 mg/mL (33.73 mM)  
DMSO : ≥ 31 mg/mL (31.37 mM)  
\* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		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

- 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
- 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
- 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<sub>i</sub> of 7.1 nM. Carbetocin has high affinity to chimeric N-terminus (E1) of the oxytocin receptor (K<sub>i</sub>=1.17 μM). Carbetocin has the potential for postpartum hemorrhage research. Carbetocin can cross the blood-brain barrier and produces antidepressant-like activity via activation of oxytocin receptors in the CNS<sup>[1][2][3]</sup>.

<b>In Vitro</b>	<p>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 (<math>K_i=13</math> nM), E123 (<math>K_i=56</math> nM), and E1234 (<math>K_i=37</math> nM)<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
<b>In Vivo</b>	<p>Carbetocin (2-20 mg/kg; i.p.) has a significant effect of treatment on the percent time spent climbing, swimming and immobile<sup>[1]</sup>.</p> <p>Carbetocin (1, 10,100 <math>\mu</math>g/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 <math>\mu</math>g/rat<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" data-bbox="347 520 1516 793"> <tr> <td data-bbox="347 520 618 583">Animal Model:</td> <td data-bbox="618 520 1516 583">Male Sprague-Dawley rats weighing between 300 and 500 g<sup>[1]</sup></td> </tr> <tr> <td data-bbox="347 583 618 646">Dosage:</td> <td data-bbox="618 583 1516 646">2, 6.4, 20 mg/kg</td> </tr> <tr> <td data-bbox="347 646 618 709">Administration:</td> <td data-bbox="618 646 1516 709">IP; single dose</td> </tr> <tr> <td data-bbox="347 709 618 793">Result:</td> <td data-bbox="618 709 1516 793">Increased climbing with 6.4 mg/kg and resulted in a significantly greater proportion of time spent swimming with 20 mg/kg.</td> </tr> </table>	Animal Model:	Male Sprague-Dawley rats weighing between 300 and 500 g <sup>[1]</sup>	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.
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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.

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

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