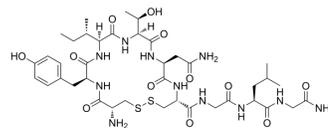


## (Thr4,Gly7)-Oxytocin

<b>Cat. No.:</b>	HY-P3467
<b>CAS No.:</b>	60786-59-6
<b>Molecular Formula:</b>	C <sub>39</sub> H <sub>61</sub> N <sub>11</sub> O <sub>12</sub> S <sub>2</sub>
<b>Molecular Weight:</b>	940.1
<b>Target:</b>	Oxytocin Receptor; Potassium Channel
<b>Pathway:</b>	GPCR/G Protein; Membrane Transporter/Ion Channel
<b>Storage:</b>	Sealed storage, away from moisture and light
	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)



### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : 100 mg/mL (106.37 mM; Need ultrasonic)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	1.0637 mL	5.3186 mL	10.6372 mL
5 mM	0.2127 mL	1.0637 mL	2.1274 mL
10 mM	0.1064 mL	0.5319 mL	1.0637 mL

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

### BIOLOGICAL ACTIVITY

#### Description

(Thr4,Gly7)-Oxytocin, an Oxytocin analogue, is a specific OT receptor agonist. (Thr4,Gly7)-Oxytocin also excites subicular neurons via activation of TRPV1 channels, and depression of K<sup>+</sup> channels. [1][2].

#### IC<sub>50</sub> & Target

OT receptors, K<sup>+</sup> channels<sup>[1]</sup>.

#### In Vitro

(Thr4,Gly7)-Oxytocin (1 μM, 1 min) evokes an inward current of 5.9 pA in paraventricular thalamus (PVT) neurons<sup>[1]</sup>.  
 (Thr4,Gly7)-Oxytocin (1 μM, 1 min) increases spontaneous excitatory postsynaptic currents (sEPSCs) frequency in PVT neurons<sup>[1]</sup>.  
 (Thr4,Gly7)-Oxytocin (0.3 μM, 5 min) induces depolarization in both bursting cells and regular firing cells<sup>[2]</sup>.  
 (Thr4,Gly7)-Oxytocin (0.3 μM, 5 min) depolarizes subicular neurons by activating TRPV1 channels<sup>[2]</sup>.  
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

(Thr4,Gly7)-Oxytocin (1 μM, direct intra-PVT infusion for 1 min) evokes depolarization on TGOT-responsive neurons in mice [1].

(Thr4,Gly7)-Oxytocin (100 ng, intracerebroventricular injection) increases nitric oxide production in the paraventricular nucleus of the hypothalamus of male rats<sup>[3]</sup>.

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

Animal Model:	Swiss Webster mice <sup>[1]</sup>
Dosage:	1 $\mu$ M
Administration:	Intratracheal administration for 24 h
Result:	Excited 34.3% of aPVT neurons, 57.6% of mPVT neurons, and 60.0% of pPVT neurons. Increased the firing rate of TGOT-responsive PVT neurons in all subregions.

## REFERENCES

- [1]. Lily R Barrett, et al. Oxytocin activation of paraventricular thalamic neurons promotes feeding motivation to attenuate stress-induced hypophagia. *Neuropsychopharmacology*. 2021 Apr;46(5):1045-1056.
- [2]. Binqi Hu, et al. Activation of Oxytocin Receptors Excites Subicular Neurons by Multiple Signaling and Ionic Mechanisms. *Cereb Cortex*. 2021 Mar 31;31(5):2402-2415.
- [3]. M R Melis, et al. Oxytocin increases nitric oxide production in the paraventricular nucleus of the hypothalamus of male rats: correlation with penile erection and yawning. *Regul Pept*. 1997 Mar 26;69(2):105-11.

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

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