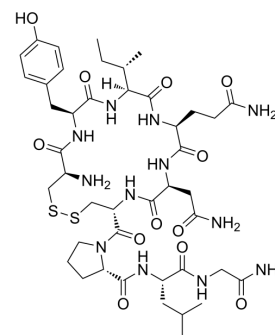


## Oxytocin

<b>Cat. No.:</b>	HY-17571
<b>CAS No.:</b>	50-56-6
<b>Molecular Formula:</b>	C <sub>43</sub> H <sub>66</sub> N <sub>12</sub> O <sub>12</sub> S <sub>2</sub>
<b>Molecular Weight:</b>	1007
<b>Sequence:</b>	Cys-Tyr-Ile-Gln-Asn-Cys-Pro-Leu-Gly-NH <sub>2</sub> (Disulfide bridge:Cys1-Cys6)
<b>Sequence Shortening:</b>	CYIQNCPLG-NH <sub>2</sub> (Disulfide bridge:Cys1-Cys6)
<b>Target:</b>	Oxytocin Receptor; Endogenous Metabolite
<b>Pathway:</b>	GPCR/G Protein; Metabolic Enzyme/Protease
<b>Storage:</b>	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

DMSO : 100 mg/mL (99.30 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent		1 mg	5 mg	10 mg
	Concentration	Mass			
	1 mM		0.9930 mL	4.9652 mL	9.9305 mL
	5 mM		0.1986 mL	0.9930 mL	1.9861 mL
	10 mM		0.0993 mL	0.4965 mL	0.9930 mL

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

### BIOLOGICAL ACTIVITY

#### Description

Oxytocin ( $\alpha$ -Hypophamine; Oxytocic hormone) is a pleiotropic, hypothalamic peptide known for facilitating parturition, lactation, and prosocial behaviors. Oxytocin can function as a stress-coping molecule with anti-inflammatory, antioxidant, and protective effects especially in the face of adversity or trauma<sup>[1][2]</sup>.

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

Human Endogenous Metabolite

#### In Vivo

During the LMA task, rat core body temperature are modestly decreased. Oxytocin (subcutaneous injection; 0.1 mg/kg-0.3 mg/kg; single dose) produces significantly greater hypothermia (at 0.3 mg/kg) than either saline or the two lower doses of oxytocin. Oxytocin at 0.3 mg/kg produces a significantly greater decrease in temperature than vehicle between 15-60 min post injection, whereas 0.1 mg/kg slightly decreases temperature at the 30 min time point only<sup>[1]</sup>. Oxytocin (0.1 mg/kg) engages in significantly more body sniffing and ano-genital sniffing compared with saline controls. It also increases the total time spent in social interaction (71.6±4.3 s), compared to those receiving vehicle (56.9±4.1 s)<sup>[1]</sup>.

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

Animal Model:	Fifty-six male Lister-hooded rats (150-200 g) <sup>[1]</sup>
Dosage:	0.1 mg/kg-0.3 mg/kg
Administration:	Subcutaneous injection; 0.1 mg/kg-0.3 mg/kg; single dose
Result:	Produced significantly greater hypothermia (at 0.3 mg/kg) than the saline group.

## CUSTOMER VALIDATION

- Signal Transduct Target Ther. 2023 Jan 2;8(1):3.
- Bioactive Materials. 2023 Aug.
- Nat Struct Mol Biol. 2022 Mar 3.
- ACS Appl Mater Interfaces. 2022 May 18;14(19):21822-21835.
- J Headache Pain. 2021 Jul 27;22(1):84.

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## REFERENCES

[1]. Shivali Kohli, et al. Oxytocin attenuates phencyclidine hyperactivity and increases social interaction and nucleus accumbens dopamine release in rats. *Neuropsychopharmacology*. 2019 Jan;44(2):295-305.

[2]. C Sue Carter, et al. Is Oxytocin "Nature's Medicine"? *Pharmacol Rev*. 2020 Oct;72(4):829-861.

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

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