# Atosiban

**Cat. No.:** HY-17572

**CAS No.:** 90779-69-4

**Molecular Formula:** $C_{43}H_{67}N_{11}O_{12}S_2$

**Molecular Weight:** 994.19

**Target:** Oxytocin Receptor; Vasopressin Receptor

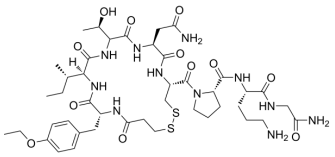
**Pathway:** GPCR/G Protein

**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**

$H_2O$ : 16.67 mg/mL (16.77 mM; Need ultrasonic)

DMSO : ≥ 16.67 mg/mL (16.77 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 1.0058 mL | 5.0292 mL | 10.0584 mL |
| 5 mM | 0.2012 mL | 1.0058 mL | 2.0117 mL |
| 10 mM | 0.1006 mL | 0.5029 mL | 1.0058 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: ≥ 1.67 mg/mL (1.68 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.67 mg/mL (1.68 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (1.68 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Atosiban (RW22164; RWJ22164) is a nonapeptide competitive vasopressin/oxytocin receptor antagonist, and is a desamino-oxytocin analogue. Atosiban is the main tocolytic agent and has the potential for spontaneous preterm labor research[1].

**In Vitro**

Atosiban inhibits the oxytocin-mediated release of IP3 from the myometrial cell membrane. There is reduced release of intracellular, stored calcium from the sacroplasmic reticulum of myometrial cells, and reduced influx of $Ca^{2+}$ from the

| | |
|---|---|
| | extracellular space through voltage gated channels. In addition, Atosiban suppresses oxytocin-mediated release of PGE and PGF from the decidua[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | The posterior pituitary hormones, oxytocin and arginine vasopressin, differ in structure by only two amino acids, and Atosiban influences physiological effects of arginine vasopressin on the feto-maternal cardiovascular and renal systems. In late-gestation sheep, the administration of Atosiban for 1 hour fails to induce fetomaternal cardiovascular changes[1]. Atosiban blocks the activation of oxytocin-receptor-expressing neurons in the parabrachial nucleus of mice[2].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Front Neurosci. 2021 Sep 10;15:723064.
- J Pharm Biomed Anal. 2022: 115156.
- J Pharm Biomed Anal. 11 December 2021, 114518.

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## REFERENCES

[1]. Sanu O, et al. Critical appraisal and clinical utility of atosiban in the management of preterm labor. Ther Clin Risk Manag. 2010 Apr 26;6:191-9.

[2]. Philip J Ryan, et al. Oxytocin-receptor-expressing Neurons in the Parabrachial Nucleus Regulate Fluid Intake. Nat Neurosci. 2017 Dec;20(12):1722-1733.



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