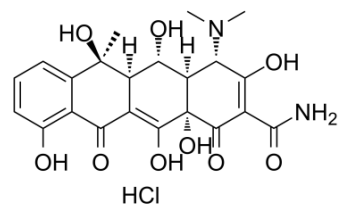


## Oxytetracycline hydrochloride

<b>Cat. No.:</b>	HY-B0275A		
<b>CAS No.:</b>	2058-46-0		
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>25</sub> ClN <sub>2</sub> O <sub>9</sub>		
<b>Molecular Weight:</b>	496.89		
<b>Target:</b>	Bacterial; HSV; Antibiotic; Endogenous Metabolite		
<b>Pathway:</b>	Anti-infection; Metabolic Enzyme/Protease		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 500 mg/mL (1006.26 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	2.0125 mL	10.0626 mL	20.1252 mL
		5 mM	0.4025 mL	2.0125 mL	4.0250 mL
10 mM		0.2013 mL	1.0063 mL	2.0125 mL	
Please refer to the solubility information to select the appropriate solvent.					
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 4.17 mg/mL (8.39 mM); Clear solution  2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 4.17 mg/mL (8.39 mM); Clear solution				

### BIOLOGICAL ACTIVITY

<b>Description</b>	Oxytetracycline hydrochloride is an antibiotic belonging to the tetracycline class. Oxytetracycline hydrochloride potent inhibits Gram-negative and Gram-positive bacteria. Oxytetracycline hydrochloride is a protein synthesis inhibitor and prevents the binding from aminoacyl-tRNA to the complex m-ribosomal RNA. Oxytetracycline hydrochloride also possesses anti-HSV-1 activity <sup>[1][2][3]</sup> .		
<b>IC<sub>50</sub> &amp; Target</b>	HSV-1	Bacterial	Human Endogenous Metabolite
<b>In Vitro</b>	Oxytetracycline is an important member of the bacterial aromatic polyketide family, which is a structurally diverse class of natural products. Oxytetracycline is synthesized by a type II polyketide synthase that generates the poly-beta-ketone backbone through successive decarboxylative condensation of malonyl-CoA extender units, followed by modifications by		

cyclases, oxygenases, transferases, and additional tailoring enzymes<sup>[2]</sup>.

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

#### In Vivo

The effects of administration a therapeutic dose of Oxytetracycline (82.8 mg/kg of bw to 1 % bw/day) for 10 days are species specific. Oxytetracycline increases the relative liver weight in *Morone chrysops* x *M. saxatilis*, the enzymatic activity of CYP3A4 in *Ictalurus punctatus*, protein expression of CYP3A4 in *Oreochromis niloticus* and depleted the hepatic CYP3A4 in the latter<sup>[1]</sup>.

For Oxytetracycline, the limits are 100 µg/kg in muscle and milk, 200 µg/kg in egg, 300 µg/kg in liver and 600 µg/kg in kidney. Oxytetracycline (OTC) is administered to fish as medicated feed at concentrations ranging from 35 to 75 mg a.i kg-1 biomass day-1 for 7-14 days<sup>[1]</sup>.

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

## CUSTOMER VALIDATION

- Chemosphere. 2019 Jun;225:378-387.
- Saudi Pharm J. 2021 Apr 23.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Elia AC, et al. Transferability of oxytetracycline (OTC) from feed to carp muscle and evaluation of the antibiotic effects on antioxidant systems in liver and kidney. *Fish Physiol Biochem*. 2014 Aug;40(4):1055-68.

[2]. Pickens LB, et al. Oxytetracycline biosynthesis. *J Biol Chem*. 2010 Sep 3;285(36):27509-15.

[3]. Oguz Guvenmez, et al. A New Treatment Method for Herpes Simplex Virus Type 1-related Skin Lesions. *Scientific & Academic*. 2019; 8(1): 6-8.

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

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