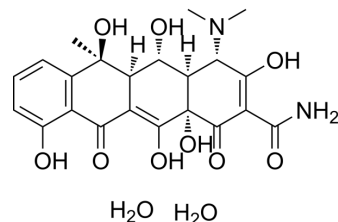


## Oxytetracycline dihydrate

<b>Cat. No.:</b>	HY-B0275B		
<b>CAS No.:</b>	6153-64-6		
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>28</sub> N <sub>2</sub> O <sub>11</sub>		
<b>Molecular Weight:</b>	496.46		
<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



### BIOLOGICAL ACTIVITY

<b>Description</b>	Oxytetracycline dihydrate is an antibiotic belonging to the tetracycline class. Oxytetracycline dihydrate potent inhibits Gram-negative and Gram-positive bacteria. Oxytetracycline dihydrate is a protein synthesis inhibitor and prevents the binding from aminoacyl-tRNA to the complex m-ribosomal RNA. Oxytetracycline dihydrate also possesses anti-HSV-1 activity [1][2][3].		
<b>IC<sub>50</sub> &amp; Target</b>	Tetracycline	HSV-1	Bacterial
<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[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.		
<b>In Vivo</b>	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 <i>Morone chrysops</i> x <i>M. saxatilis</i> , the enzymatic activity of CYP3A4 in <i>Ictalurus punctatus</i> , protein expression of CYP3A4 in <i>Oreochromis niloticus</i> and depleted the hepatic CYP3A4 in the latter[1]. 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[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

### CUSTOMER VALIDATION

- Water Res. 2023 May 21, 120110.
- Theranostics. 2022 Jan 1;12(3):1187-1203.
- Chemosphere. 2019 Jun;225:378-387.
- Sci Rep. 2022 Aug 25;12(1):14502.

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- Saudi Pharm J. 2021 Apr 23.

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## REFERENCES

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- [1]. Pickens LB, et al. Oxytetracycline biosynthesis. J Biol Chem. 2010 Sep 3;285(36):27509-15.
- [2]. 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.
- [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.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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