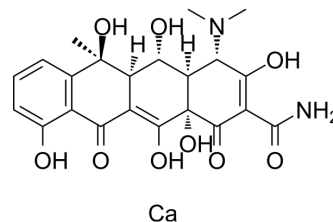


## Oxytetracycline calcium

<b>Cat. No.:</b>	HY-B0275C
<b>CAS No.:</b>	7179-50-2
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>24</sub> CaN <sub>2</sub> O <sub>9</sub>
<b>Molecular Weight:</b>	500.51
<b>Target:</b>	Antibiotic; Bacterial; HSV; Endogenous Metabolite
<b>Pathway:</b>	Anti-infection; Metabolic Enzyme/Protease
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Oxytetracycline calcium is an antibiotic belonging to the tetracycline class. Oxytetracycline calcium potently inhibits Gram-negative and Gram-positive bacteria. Oxytetracycline calcium is a protein synthesis inhibitor and prevents the binding from aminoacyl-tRNA to the complex m-ribosomal RNA. Oxytetracycline calcium also possesses anti-HSV-1 activity <sup>[1][2][3]</sup> .			
<b>IC<sub>50</sub> &amp; Target</b>	HSV-1	Tetracycline	Human Endogenous Metabolite	Microbial Metabolite
<b>In Vitro</b>	Oxytetracycline calcium is an important member of the bacterial aromatic polyketide family, which is a structurally diverse class of natural products. Oxytetracycline calcium 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.			
<b>In Vivo</b>	The effects of administration a therapeutic dose of Oxytetracycline (82.8 mg/kg of bw to 1 % bw/day) calcium for 10 days are species specific. Oxytetracycline calcium 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 <sup>[1]</sup> . For Oxytetracycline calcium, 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 calcium is administered to fish as medicated feed at concentrations ranging from 35 to 75 mg a.i kg <sup>-1</sup> biomass day <sup>-1</sup> for 7-14 days <sup>[1]</sup> . 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.
- Saudi Pharm J. 2021 Apr 23.

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## REFERENCES

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- [1]. Elia, A.C., 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.
- [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.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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