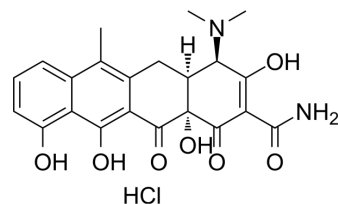


4-Epianhydrotetracycline hydrochloride

Cat. No.:	HY-136439
CAS No.:	4465-65-0
Molecular Formula:	C ₂₂ H ₂₃ ClN ₂ O ₇
Molecular Weight:	462.88
Target:	Bacterial; Antibiotic; Apoptosis
Pathway:	Anti-infection; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	4-Epianhydrotetracycline hydrochloride is a major intermediate product of Tetracycline (HY-A0107). 4-Epianhydrotetracycline hydrochloride shows lethal effects and induces cell apoptosis of zebrafish embryos. 4-Epianhydrotetracycline hydrochloride inhibits <i>Shewanella</i> , <i>E. coli</i> and <i>P. aeruginosa</i> with MIC values of 2, 1 and 64 mg/L, respectively ^[1] .								
IC₅₀ & Target	Tetracycline								
In Vitro	<p>4-Epianhydrotetracycline hydrochloride (0-20 mg/L; 96 h) significantly enhances ROS levels, and malondialdehyde (MDA) concentration and protein carbonyl (PC) content with increasing concentration of 5-20.0 mg/L^[1].</p> <p>4-Epianhydrotetracycline hydrochloride (0-20 mg/L; 96 h) dose-dependently affects SOD activities with increasing first and then decreasing, and at a dose of 2.50 mg/L SOD activity reached the highest value^[1].</p> <p>4-Epianhydrotetracycline hydrochloride (0-20 mg/L; 96 h) induces cell apoptosis^[1].</p> <p>4-Epianhydrotetracycline hydrochloride (0-100 mg/L) shows lethal effects of zebrafish embryos with an LC₅₀ value of 29.13 mg/L at 96 h^[2].</p> <p>4-Epianhydrotetracycline hydrochloride increases zebrafish embryos malformation with an EC₅₀ value of 8.57 mg/L at 96 h^[2].</p> <p>4-Epianhydrotetracycline hydrochloride inhibits the heart rate (10-20 mg/L) and shows delayed hatching effects (5-20.0 mg/L)^[2].</p> <p>4-Epianhydrotetracycline hydrochloride (0-20 mg/L) shows inhibitory effects to <i>Shewanella</i>, <i>E. coli</i> and <i>P. aeruginosa</i> with MIC values of 2, 1 and 64 mg/L, respectively^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Apoptosis Analysis^[1]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>Zebrafish embryos</td> </tr> <tr> <td>Concentration:</td> <td>0, 1.25, 2.5, 5, 10 and 20 mg/L</td> </tr> <tr> <td>Incubation Time:</td> <td>96 hours</td> </tr> <tr> <td>Result:</td> <td>Dose-dependently induced cell apoptosis with 66.67% zebrafish embryos showed apoptosis phenomenon at a dose of 20.0 mg/L.</td> </tr> </table>	Cell Line:	Zebrafish embryos	Concentration:	0, 1.25, 2.5, 5, 10 and 20 mg/L	Incubation Time:	96 hours	Result:	Dose-dependently induced cell apoptosis with 66.67% zebrafish embryos showed apoptosis phenomenon at a dose of 20.0 mg/L.
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REFERENCES

- [1]. Wang M, et al. Effects of 4-epianhydrotetracycline on oxidative stress in zebrafish (*Danio rerio*) embryos. *Sci Total Environ.* 2021 Nov 20;796:149047.
- [2]. Wang M, et al. Developmental toxicity and transcriptome analysis of 4-epianhydrotetracycline to zebrafish (*Danio rerio*) embryos. *Sci Total Environ.* 2020 Sep 10;734:139227.
- [3]. Long S, et al. Toxicity of tetracycline and its transformation products to a phosphorus removing *Shewanella* strain. *Chemosphere.* 2020 May;246:125681.
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Caution: Product has not been fully validated for medical applications. For research use only.

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