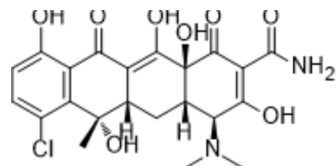


Chlortetracycline

Cat. No.:	HY-B1327A
CAS No.:	57-62-5
Molecular Formula:	C ₂₂ H ₂₃ ClN ₂ O ₈
Molecular Weight:	478.88
Target:	Bacterial; Antibiotic; Parasite
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Chlortetracycline (7-Chlorotetracycline) is an orally active, effective and selectively methanogenic bacteria inhibitor with bactericidal effects. Chlortetracycline is also a antibiotic that acts by inhibiting bacterial protein synthesis. Additionally, Chlortetracycline is a specific and potent calcium ionophore antibiotic, inhibiting binding of aminoacyl-tRNA to ribosomes ^[1] [2][3][4].	
IC₅₀ & Target	Tetracycline	
In Vitro	Chlortetracycline (10, 50, 100, 200 mg/L, 18 days) inhibits methane (a main component of biogas) production and is degraded and metabolized by anaerobic digestion (AD) at high concentrations and incubation temperatures ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
In Vivo	Chlortetracycline (50 mg/kg, p.o., administration for 42 consecutive days) significantly increases the IgM antibody levels and decreases the IgA antibody levels in serum of mice ^[4] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	SPF level Kunming mice (KM) ^[4]
	Dosage:	50 mg/kg
	Administration:	p.o., administration for 42 consecutive days
	Result:	Significantly increased the IgM antibody levels, decreased the IgA antibody levels and not influence IgG antibody levels in serum of mice.

CUSTOMER VALIDATION

- Chemosphere. 2019 Jun;225:378-387.
- Sci Rep. 2022 Aug 25;12(1):14502.
- Saudi Pharm J. 2021 Apr 23.

REFERENCES

- [1]. Reyes-Contreras C, et al. Methanogenic toxicity evaluation of Chlortetracycline[J]. Electronic Journal of Biotechnology, 2015, 18(6): 445-450.
- [2]. Liu D, et al. Synthesis and evaluation of bisulfate/mesylate-conjugated chlortetracycline with high solubility and bioavailability[J]. Acta Pharm. 2020 Dec 1;70(4):483-498.
- [3]. Elmund GK, et al. Role of excreted chlortetracycline in modifying the decomposition process in feedlot waste. Bull Environ Contam Toxicol. 1971 Mar-Apr;6(2):129-32.
- [4]. Saling PM, et al. Mouse gamete interactions during fertilization in vitro. Chlortetracycline as a fluorescent probe for the mouse sperm acrosome reaction. J Cell Biol. 1979 Dec;83(3):544-55.
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Caution: Product has not been fully validated for medical applications. For research use only.

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