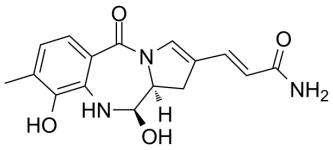
Anthramycin

Cat. No.:	HY-150036
CAS No.:	4803-27-4
Molecular Formula:	$C_{16}H_{17}N_3O_4$
Molecular Weight:	315.32
Target:	Antibiotic; Cholecystokinin Receptor
Pathway:	Anti-infection; GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Anthramycin, a member of the pyrolobenzodiazepine (PBD) family, is a potent antibiotic. Anthramycin has potent antitumor activity. Anthramycin can act as an potent antagonist of cholecystokinin in the central nervous system in mice[1][2][3].

In Vitro

ANT is delivered through the skin for PG (propylene glycol), TC (Transcutol P) and PGML (propylene glycol monolaurate) with the active “tracking” the skin penetration of both PG and TC[1].

Anthramycin (10-1000 μM) dose not affect the ATPase activity of heart mitochondria[3].

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

In Vivo

Anthramycin (0-0.5 mg/kg, IP, once) has potent anti-CCK (cholecystokinin) activity and antinociceptive effects in the central nervous system in mice[2].

Anthramycin (0.1-0.5 mg/kg, SC, daily for 8 days) has no effect on mitochondrial metabolism of the rat heart[3].

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Animal Model:	Male ddY mice (20 ± 2 g, 12-14 each group)[2]
Dosage:	0, 0.3, and 0.5 mg/kg
Administration:	IP, once, 10 min before the intracisternal (i.c.) injection of CCK
Result:	Significantly inhibited CCK-induced increase in the pain threshold in a dose-dependent manner. Almost completely suppressed the antinociceptive effects of CCK at the higher dose (0.5 mg/kg).

Animal Model:	Female CFN Gif rats (140-180 g)[3]
Dosage:	0.1 mg/kg, 0.25 mg/kg, and 0.5 mg/kg
Administration:	SC, daily for 8 days
Result:	Recorded no differences between anthramycin- and DMSO-treated rats with respect to P/O ratios, respiration rates, and ATPase activity of heart mitochondria.

REFERENCES

[1]. Haque T, et al. Topical delivery of anthramycin II. Influence of binary and ternary solvent systems. Eur J Pharm Sci. 2018 Aug 30;121:59-64.

[2]. Kubota K, et al. Cholecystokinin antagonism by anthramycin, a benzodiazepine antibiotic, in the central nervous system in mice. Brain Res. 1989 Apr 17;485(1):62-6.

[3]. Cargill C, et al. Effects of daunomycin and anthramycin on electrocardiogram and mitochondrial metabolism of the rat heart. J Natl Cancer Inst. 1974 Aug;53(2):481-6.

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