Product Data Sheet

Product Name: Pentamidine dihydrochloride
Cat. No.: GC14941

Chemical Properties

Cas. No.	50357-45-4		
Chemical Name	[amino-[4-[5-[4-[amino(azaniumylidene)methyl]phenoxy]pentoxy]phenyl]methylidene]azanium;dichloride		
SMILES	C1=CC(=CC=C1C(=[NH2+])N)OCCCCCOC2=CC=C(C=C2)C(=[NH2+])N.[Cl-].[Cl-]		
Formula	$C_{19}H_{26}Cl_2N_4O_2$	M.Wt	413.34
Solubility	≥ 41.3mg/mL in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Pentamidine dihydrochloride		

Background

Pentamidine Dihydrochloride(MP601205 dihydrochloride) is an antimicrobial agent.Target: AntiparasiticPentamidine Dihydrochloride has a potent in vitro antiprotozoal activity. Pentamidine displays cytotoxic activity against L. infantum promastigotes with IC50 of 2.5 μM. 2.5 μM Pentamidine induces early programmed cell death in 49.6% of L. infantum promastigotes. 2.5 μM Pentamidine induces a notorious decrease in promastigotes in both G1 and S phases relative to the control-untreated samples (G1:77.0 vs 15.0%; S:11.0 vs 2.4% for control- and pentamidine-treated promastigotes, resp). Pentamidine is able to bind with calf-thymus DNA (CT-DNA) and induces conformational changes in the DNA double helix. Pentamidine also binds with ubiquitin to modifiy the β-cluster of ubiquitin [1]. Pentamidine is an inhibitor of phosphatase of regenerating liver (PRLs). 1 μg/mL of Pentamidine complete inhibits the activity of recombinant PTP1B in dephosphorylating a phos-photyrosine peptide. 10 μg/mL of Pentamidine completely inhibits the activities of recombinant PRL-1, PRL-2 and PRL-3 in dephosphorylating a phosphotyrosine peptide substrate. Incubation with Pentamidine (1 μg/mL) for 48 h reduces the activity of intracellular PRL phosphatases in transfected NIH3T3 cells by more than 85%. 10 μg/mL Pentamidine completely inhibits the growth of melanoma cell line (WM9), prostate carcinoma cell line (DU145 and C4-2), ovarian carcinoma cell line (Hey), colon carcinoma cell line (WM480), and lung carcinoma cell line (A549) which all express endogenous PRLs [2].

References:
[1]. Nguewa, P.A., et al., Pentamidine is an antiparasitic and apoptotic drug that selectively modifies

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ubiquitin. Chem Biodivers, 2005. 2(10): p. 1387-400.
[2]. Pathak, M.K., et al., Pentamidine is an inhibitor of PRL phosphatases with anticancer activity. Mol Cancer Ther, 2002. 1(14): p. 1255-64.

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