Product Data Sheet

Product Name: Altretamine hydrochloride
Cat. No.: GC35310

Chemical Properties

Cas. No.	2975-00-0		
SMILES	CN(C)C1=NC(N(C)C)=NC(N(C)C)=N1.Cl		
Formula	$C_9H_{19}ClN_6$	M.Wt	246.74
Solubility	Soluble 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	Altretamine hydrochloride		

Protocol

Animal experiment:

Mice[1]Balb/c nu/nu 4 week old female mice weighing 18-22 g, receive s.c. injections of 8-10 million MV522 cells. Altretamine is administered i.p. three times a week for 3 weeks, starting on day 10 after tumor implantation. Tumor size is measured in two perpendicular diameters and tumor weight (TW) estimated according to the formula: w = [(width)2 × length/2]. Altretamine is prepared as stock solutions of 1-10 mg/mL in 40% DMSO/normal saline and diluted with 10% DMSO/normal saline as required[1].

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References:

[1]. Kelner MJ, et al. Synergy of irofulven in combination with other DNA damaging agents: synergistic interaction with altretamine, alkylating, and platinum-derived agents in the MV522 lung tumor model. Cancer Chemother Pharmacol. 2008 Dec;63(1):19-26.

Background

Altretamine is an antineoplastic agent with antiproliferative activity.[1] It induces cytotoxicity in an ovarian cancer cell line when used at a concentration of 10 µg/ml, with radiolabeled thymidine uptake equal to 102 and 75% of controls after 48 and 120 hours, respectively.[2] Altretamine (100 µg/ml) reduces colony survival in A204 human rhabdomyosarcoma cells in an NADP-dependent manner in the presence of an S-9 hepatic activating mixture.[3] *In vivo*, altretamine (150 mg/kg) reduces tumor growth in a mouse model of M5076 murine reticulum cell sarcoma.[1] Altretamine (0.5 mM) inhibits glutathione peroxidase 4 (GPX4) and induces accumulation of lipid-reactive oxygen species (ROS) in U-2932 cells without depleting glutathione (GSH) levels, suggesting it is a class II ferroptosis-inducing compound (FIN).[4] It also acts as a chemosterilant in houseflies, preventing hatching and pupation in male and female houseflies when used at a concentration of 0.05%.[5] Formulations of altretamine have been used in the treatment of various cancers.

1.Langdon, S.P., Simmonds, R.J., and Stevens, M.F.G.Triazines and related products. Part 26. Synthesis and chemistry of bicyclic analogues of the antitumour drug 2,4,6-tris(dimethylamino)-1,3,5-triazine (hexamethylmelamine)J. Chem. Soc. Perkin 1993-998(1984) 2.D'Incalci, M., Erba, E., Balconi, G., et al.Time dependence of the in vitro cytotoxicity of hexamethylmelamine and its metabolitesBr. J. Cancer41(4)630-635(1980)

Product Data Sheet

3.Miller, K.J., McGovern, R.M., and Ames, M.M.Effect of a hepatic activation system on the antiproliferative activity of hexamethylmelamine against human tumor cell linesCancer Chemother. Pharmacol.15(1)49-53(1985) 4.Woo, J.H., Shimoni, Y., Yang, W.S., et al.Elucidating compound mechanism of action by network perturbation analysisCell162(2)441-451(2015) 5.LaBrecque, G.C., Fye, R.L., DeMilo, A.B., et al.Substituted melamines as chemosterilants of house fliesJ. Econ. Entomol.61(6)1621-1632(1968)

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