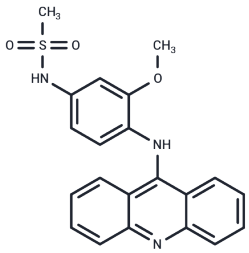
Data Sheet (Cat.No.T5820)

TargetMol

Amsacrine hydrochloride

Chemical Properties



CAS No. : 54301-15-4

Formula: C21H20ClN3O3S

Molecular Weight: 429.92

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Amsacrine hydrochloride (acridinyl anisidide hydrochloride) is topoisomerase II inhibitor , is used in the treatment of acute myelogenous leukemia.
Targets(IC50)	Autophagy,Topoisomerase
In vitro	Amsacrine hydrochloride blocked HERG currents in HEK 293 cells and Xenopus oocytes in a concentration-dependent manner, with IC50 values of 209.4 nm and 2.0 microm, respectively. HERG channels were primarily blocked in the open and inactivated states, and no additional voltage dependence was observed. Amsacrine caused a negative shift in the voltage dependence of both activation (-7.6 mV) and inactivation (-7.6 mV). HERG current block by amsacrine was not frequency dependent.?The S6 domain mutations Y652A and F656A attenuated (Y652A) or abolished (F656A, Y652A/F656A) HERG current blockade, indicating that amsacrine binding requires a common drug receptor within the pore-S6 region[1].
In vivo	In animals treated with various doses of amsacrine (0.5-12 mg kg(-1)), significant increases in micronucleated polychromatic erythrocytes were observed at 9 and 12 mg kg(-1), with higher doses causing significant suppression of erythroblast proliferation. Amsacrine exhibits high incidences of clastogenicity and low incidences of aneugenicity [2].
Cell Research	Voltage-clamp measurements of Xenopus oocytes were performed in a solution containing (in mM): 5 KCl, 100 NaCl, 1.5. CaCl2, 2 MgCl2 and 10 HEPES (pH adjusted to 7.4 with NaOH). Current and voltage electrodes were filled with 3 m KCl solution. For whole-cell patch-clamp recordings from HEK 293 cells, electrodes were filled with the following solution (in mM): 130 K-aspartate, 5.0 MgCl2, 5 EGTA, 4 ATP, 10 HEPES (pH adjusted to 7.2 with KOH). The external solution for these experiments contained (in mM): 137 NaCl, 4.0 KCl, 1.0 MgCl2, 1.8 CaCl2, 10 HEPES, 10 glucose (pH adjusted to 7.4 with NaOH). Amsacrine was prepared as 10 mm stock solution in DMSO and stored at -20℃. On the day of experiments, aliquots of the stock solution were diluted to the desired concentrations with the bath solution. HERG current amplitudes (recorded from Xenopus oocytes) were not significantly altered upon application of 1% DMSO (v v^-1; maximum bath concentration) for 20 min. In addition, DMSO did not affect HERG channel currents recorded from HEK 293 cells at concentrations up to 0.3% (maximum bath concentration in this study: 0.1% DMSO)[1].

Solubility Information

Solubility	DMSO: 4.3 mg/mL (10 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 1 mg/mL (2.33 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.326 mL	11.6301 mL	23.2601 mL
5 mM	0.4652 mL	2.326 mL	4.652 mL
10 mM	0.2326 mL	1.163 mL	2.326 mL
50 mM	0.0465 mL	0.2326 mL	0.4652 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Thomas D , Hammerling B C , Wu K , et al. Inhibition of cardiac HERG currents by the DNA topoisomerase II inhibitor amsacrine: mode of action[J]. British Journal of Pharmacology, 2004, 142(3):485-494.

Attia S M . Molecular cytogenetic evaluation of the mechanism of genotoxic potential of amsacrine and nocodazole in mouse bone marrow cells[J]. Journal of Applied Toxicology, 2013, 33(6).

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