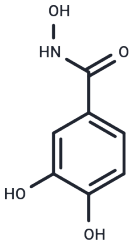
Data Sheet (Cat.No.T7525)

TargetMol

Didox

Chemical Properties



CAS No. : 69839-83-4

Formula: C7H7NO4

Molecular Weight: 169.13

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	Didox (NSC-324360) is a synthetic ribonucleotide reductase (RR) inhibitor shown to reduce oxidative injury markers in the brains of HIV patients with dementia.
Targets(IC50)	DNA/RNA Synthesis
In vitro	Didox induced cell death and that this effect was suppressed by iron supplementation.? Cell treatments with didox caused changes of cellular iron content, TfR1 and ferritin levels comparable to those caused by the iron chelators, deferoxamine (DFO) and deferiprone (DFP).Didox is a bidentated iron chelator with two theoretical possible positions for the binding and among them that with the two hydroxyls of the catechol group acting as ligands is the more likely one. The iron chelating property of didox may contribute to its antitumor activity not only blocking the formation of the tyrosil radical on Tyr122 (such as HU) on RRM2 (essential for its activity) but also sequestering the iron needed by this enzyme and to the cell proliferation[1].
In vivo	Didox treatment of mouse bone marrow-derived mast cells (BMMC) reduced IgE-stimulated degranulation and cytokine production, including IL-6, IL-13, TNF and MIP-1a (CCL3)[2].
Cell Research	The cells were seeded in a 96-well plate (at a density of 2 × 10^3 cells for HA22T/VGH;? 1.5 × 103 cells for HuH7) and exposed to various concentrations of didox and only HA22T/VGH also to hydroxyurea, DFO or DFP (0, 1, 10, 25, 50, 100, 200 and 500 μM) for 24, 48 and 72 h. In other experiments, HA22T/VGH were seeded in 96-well plates and treated with a single dose of didox, HU, DFO, DFP alone or in combination with increasing doses of FAC (25, 50, 100, 200 and 400 μM) for 48–72 h. In other type of treatment,?HA22T/VGH cells were or pre-treated for 16 h with a single dose of didox (200 μM) and then treated in combination with FAC (400–800 μM) or directly in combination didox-FAC for 48–72 h.Cell viability was evaluated with an MTT assay.?After the indicated time points and treatments, the supernatant was removed and 100 μL of the MTT solution (0.5 mg/mL) diluted in the cell medium was added to the wells.?After 3.5 h of incubation at 37 °C and 5% CO2, the MTT medium was removed and 75 μL of DMSO was added to each well.?Plates were shaken for 15 min at 37 °C until complete dissolution and absorbance was measured at 540 nm emission wavelengths.?Average percentage of cell viability at each concentration was calculated using Microsoft Excel 2016 software[1].

Solubility Information

Solubility	DMSO: 100 mg/mL (591.26 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: 4 mg/mL (23.65 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	5.9126 mL	29.5631 mL	59.1261 mL
5 mM	1.1825 mL	5.9126 mL	11.8252 mL
10 mM	0.5913 mL	2.9563 mL	5.9126 mL
50 mM	0.1183 mL	0.5913 mL	1.1825 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

Asperti M, Cantamessa L, Ghidinelli S,et al.The Antitumor Didox Acts as an Iron Chelator in Hepatocellular Carcinoma Cells[1].Pharmaceuticals (Basel). 2019 Sep 2;12(3).

Mcleod J J A , Caslin H L , Spence A J , et al. Didox (3,4-dihydroxybenzohydroxamic acid) suppresses IgE-mediated mast cell activation through attenuation of NFκB and AP-1 transcription[J]. Cellular Immunology, 2017: S0008874917301442.

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