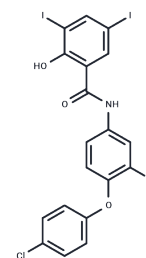


Rafoxanide

Chemical Properties

CAS No. :	22662-39-1
Formula:	C ₁₉ H ₁₁ Cl ₂ I ₂ N ₃ O ₃
Molecular Weight:	626.01
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	Rafoxanide as a dual CDK4/6 inhibitor for the treatment of skin cancer. Rafoxanide is a salicylanilide used as an anthelmintic. It is used to treat fluke, hookworm and other infestations.
Targets(IC50)	Apoptosis,Raf,OXPHOS,CDK,Parasite,p38 MAPK
In vitro	Rafoxanide exhibit a high cytotoxic effects (IC50: 1.09 μ M for A375 and 1.31 μ M for A431 cells).?Consistent with the expected properties of CDK4/6 inhibitors, rafoxanide significantly increased the G1 phase population.?Notably, Rafoxanide specifically decreased the expression of CDK4/6, cyclin D, retinoblastoma protein (Rb) and the phosphorylation of CDK4/6 and Rb[1].
In vivo	Rafoxanide specifically decreased the expression of CDK4/6, cyclin D, retinoblastoma protein (Rb) and the phosphorylation of CDK4/6 and Rb. Furthermore, the anticancer effect of rafoxanide was demonstrated in vivo in BALB/C nude mice subcutaneously xenografted with human skin cancer A375 cells. Rafoxanide (40 mg/kg, i.p.) exhibited significant antitumor activity, comparable to that of oxaliplatin (5 mg/kg, i.p.). The combined administration of rafoxanide and oxaliplatin produced a synergistic therapeutic effect. First to indicate that rafoxanide inhibits CDK4/6 activity and is a potential candidate drug for the treatment of human skin cancer[1].
Cell Research	Cell cycle analysis using an EPICS XL4 Flow Cytometer.?The cell cycle phase distribution was analyzed using ModFit LT 2.0 software.?Briefly, cells (4×10^4) were seeded in 24-well plates in DMEM containing 0.125% FBS.?After 24 h, the cell culture medium was replaced with DMEM containing 10% FBS and various doses of rafoxanide (1, 3, 10 or 30 μ M) for 6, 12 or 24 h, as indicated.?At the end of the experiments, cells (1×10^4) were fixed in ice cold 70% ethanol, and stained using a Coulter DNA Prep Reagent kit, and cellular DNA content was assessed.?All data were obtained from two separate experiments performed in triplicate[1]
Animal Research	A375 cells (1×10^6) were suspended in 0.2 ml PBS, and injected subcutaneously into the right flank of the mice (n=3).?Tumor size was assessed using a caliper.?When the tumors grew to 80-100 mm ³ (1 week after inoculation), mice were divided randomly into different experimental groups (5 mice/group), and intraperitoneally injected daily for 21 days with various testing compounds(Rafoxanide).?The mice were sacrificed by cervical dislocation, and the tumors were excised, weighed, and images were captured by camera .?The tumor volume was calculated using the formula $V = ab^2 / 2$ (a = longest axis;?b = shortest axis)[1].

Solubility Information

Solubility	DMSO: 6.27 mg/mL (10.02 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 (1.6 mM),Sonication is recommended. <i>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.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5974 mL	7.9871 mL	15.9742 mL
5 mM	0.3195 mL	1.5974 mL	3.1948 mL
10 mM	0.1597 mL	0.7987 mL	1.5974 mL
50 mM	0.0319 mL	0.1597 mL	0.3195 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

Shi X, Li H, Shi A et al. Discovery of rafxanide as a dual CDK4/6 inhibitor for the treatment of skin cancer[J]. Oncol Rep. 2018 Sep;40(3):1592-1600.

Xiao W , Xu Z , Chang S , et al. Rafxanide, an organohalogen drug, triggers apoptosis and cell cycle arrest in multiple myeloma by enhancing DNA damage responses and suppressing the p38 MAPK pathway[J]. Cancer Letters, 2019, 444:45-59.

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