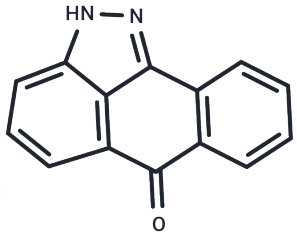
Data Sheet (Cat.No.T3109)

TargetMol

SP600125

Chemical Properties



CAS No. : 129-56-6

Formula: C14H8N2O

Molecular Weight: 220.23

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	SP600125 (JNK Inhibitor II) is a JNK inhibitor that inhibits JNK1, JNK2, and JNK3 (IC50=40/40/90 nM) with oral potency, reversibility, and ATP-competitive properties. SP600125 inhibits autophagy and induces apoptosis.
Targets(IC50)	Apoptosis,Ferroptosis,Aurora Kinase,Autophagy,JNK,Trk receptor
In vitro	**METHODS**: Mouse lung cancer cells LLC and mouse tumor cells 4T1 were treated with SP600125 (3-10 μM) for 72 h, and cell viability was detected using MTT assay. **RESULTS**: SP600125 dose-dependently inhibited the growth of LLC and 4T1 cells with IC50 of 8.14 μM and 7.37 μM. [1] **METHODS**: Jurkat T cells were pretreated with SP600125 (1-50 μM) for 10 min, and then stimulated with PMA (50 ng/mL), anti-CD3 (0.5 μg/mL), and anti-CD28 (2 μg/mL) for 30 min, and then the expression levels of target proteins were detected by Western Blot. **RESULTS**: SP600125 blocked the phosphorylation of c-Jun at an IC50 of 5-10 μM. At a concentration of 50 μM, SP600125 did not block ERK phosphorylation or inhibit IκBα degradation. Partial inhibition of phospho-p38 and ATF2 was observed at 50 μM, but not at 25 μM. [2]
In vivo	**METHODS**: To test the inhibitory activity of TNF-α in vivo, SP600125 (7.5-30 mg/kg, 30% PEG-400/20% polypropylene glycol/15% Cremophor EL/5% ethanol/30% saline) was administered intravenously or orally to CD-1 mice 15 min after LPS-induced TNF-α expression was injected. LPS-induced TNF-α expression was injected 15 min later. **RESULTS**: Intravenous administration of 15 or 30 mg/kg SP600125 significantly inhibited TNF-α serum levels, while oral administration dose-dependently blocked TNF-α expression, with a significant inhibitory effect observed at 30 mg/kg per oral dose. [2] **METHODS**: To test the antitumor activity in vivo, SP600125 (5 mg/kg) and C-2 (10 mg/kg) were injected intraperitoneally into nude mice bearing the bladder cancer tumor BIU87 once a day for twenty-one days. **RESULTS**: C-2 treatment inhibited tumor growth, and tumors in the C-2/SP600125 group were significantly lower than those in mice treated with vector or C-2 alone. [3]
Cell Research	Multiarray plate screening of mRNA was performed by High Throughput Genomics. In brief, cell lysates were prepared by using a single-step proprietary lysis buffer. Lysates were incubated with a 16-gene capture array manufactured into each well of a 96-well plate. Detection was by luminescence and was performed by HTG. SDs for triplicate samples were typically 3-8% for samples with high levels of gene expression and 15-25% for samples with very low (near-threshold) levels of cytokine gene expression [1].

Animal Research	Mouse LPS/TNF assay was performed as follows: Female CD-1 mice (8-10 weeks of age) were dosed i.v. or per os with SP600125 in PPCES vehicle (30% PEG-400/20% polypropylene glycol/15% Cremophor EL/5% ethanol/30% saline), final volume of 5 ml/kg, 15 min before i.v. injection with LPS in saline (0.5 mg/kg; Escherichia coli 055: B5). At 90 min, a terminal bleed was obtained from the abdominal vena cava, and the serum was recovered. Samples were analyzed for mouse TNF-α by using an ELISA. The in-life phase of the thymocyte apoptosis assay was performed in female C57BL/6 mice. SP600125 was administered at 0, 12, 24, and 36 h, 15 mg/kg s.c. in PPCES vehicle. Anti-CD3 (50 μg) i.p. (clone 145-2C11) was administered as a single dose immediately after SP600125 at time 0. After 48 h, mice were killed, and the thymus was dissected for thymocyte isolation. Treated and untreated mice thymuses were excised and immediately placed in complete medium (RPMI medium 1640 with 10% FBS, penicillin/streptomycin, and l-glutamine) on ice. Each thymus was then pressed between the frosted ends of 2 microscope slides to form a single cell suspension and collected through a 30 μm nylon mesh. Cells were stained for cell surface CD4 and CD8 and apoptosis and measured by flow cytometry [1].

Solubility Information

Solubility	Methanol: 1.25 mg/mL (5.68 mM),Sonication is recommended. DMSO: 65 mg/mL (295.15 mM),Sonication and heating are recommended. Ethanol: 1.1 mg/mL (4.99 mM),Heating 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: 2.21 mg/mL (10.03 mM),Solution. *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	4.5407 mL	22.7035 mL	45.4071 mL
5 mM	0.9081 mL	4.5407 mL	9.0814 mL
10 mM	0.4541 mL	2.2704 mL	4.5407 mL
50 mM	0.0908 mL	0.4541 mL	0.9081 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

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