Data Sheet (Cat.No.T7265)

TargetMol

HSP27 inhibitor J2

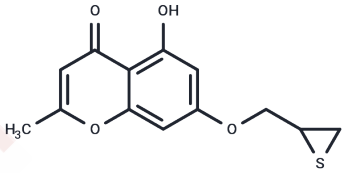
Chemical Properties

CAS No. : 2133499-85-9

Formula: C13H12O4S

Molecular Weight: 264.3

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	HSP27 inhibitor J2 (J2) (J2) is a HSP27 inhibitor, inhibits a production of HSP27 giant polymers, thereby having an effect of inhibiting a chaperone function of the HSP27 and reducing a cell protection function.
Targets(IC50)	HSP
In vivo	HSP27 inhibitor (J2) on radiation-induced lung inflammation in comparison to amifostine.In gross and histological findings,J2 treatment significantly inhibited immune cell infiltration in lung tissue, revealing anti-inflammatory potential of J2.Normal lung volume, evaluated by micro-CT analysis, in J2-treated mice was higher compared to that in irradiated mice.J2-treated mice reversed radiation-induced respiratory distress. However, amifostine did not show significant radioprotective effects in comparison to that of J2.In HSP27 transgenic mice, we observed increased immune cells recruitment and decreased volume of normal lung compared to wild type mice.Increased ROS production and oxidative stress after IR were down-regulated by J2 treatment, demonstrating antioxidant property of J2.J2 may be an effective therapeutic agent for radiation-induced lung injury[1].
Animal Research	Male C57BL/6 mice (age, 6 weeks; weight, 20–25 g), and were acclimatized (n = 5 per cage) for a week before irradiation. A single dose of 75 Gy was delivered to the left lung in a single fraction using image-guided small-animal irradiator (X-RAD 320) that was equipped with a collimator system composed of 3.5-cm-thick copper to produce focal radiation beams, as well as an imaging subsystem consisting of a fluorescent screen coupled to a charge-coupled-device camera. We selected 3-mm collimators to mimic clinical SBRT conditions by irradiating only a small volume of tissue. The mice were divided into six groups (n = 6–8 per group) as follows: (1) control (C);(2) irradiation (IR) - mice were exposed to a single dose of 75 Gy delivered to the left lung in a single fraction; (3) irradiation + J2 (IR + J2) ?15 mg/kg of J2 was intraperitoneal administered on every other day after irradiation;(4) irradiation + amifostine (IR + Ami) ?100 mg/kg of amifostine were intraperitoneal administered on every other day after irradiation; (5) J2 only (J2) ?15 mg/kg of J2 were intraperitoneal administered on every other day without irradiation; (6) Amifostine only (Ami) ?100 mg/kg of amifostine were intraperitoneal administered on every other day without irradiation. On day 14, mice were sacrificed by CO2 asphyxiation, and their lung tissues were collected for analysis[1].

Solubility Information

Solubility	DMSO: 20.83 mg/mL (78.81 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 2 mg/mL (7.57 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	3.7836 mL	18.9179 mL	37.8358 mL
5 mM	0.7567 mL	3.7836 mL	7.5672 mL
10 mM	0.3784 mL	1.8918 mL	3.7836 mL
50 mM	0.0757 mL	0.3784 mL	0.7567 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

Kim J Y , An Y M , Yoo B R , et al. HSP27 inhibitor attenuates radiation-induced pulmonary inflammation[J]. Scientific Reports, 2018, 8(1):4189.

Hwang S Y , Kwak S Y , Kwon Y , et al. Synthesis and biological effect of chrom-4-one derivatives as functional inhibitors of heat shock protein 27[J]. European Journal of Medicinal Chemistry, 2017, 139:892-900.