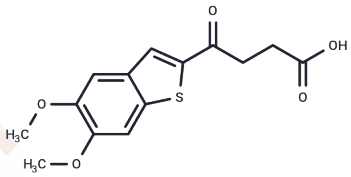
Data Sheet (Cat.No.T8798)

TargetMol

MSA-2

Chemical Properties



CAS No. : 129425-81-6

Formula: C14H14O5S

Molecular Weight: 294.32

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	MSA-2 is an orally available non-nucleotide STING agonist. The non-covalent dimer of MSA-2 binds to STING with nanomolar affinity. It shows anti-tumor activity in syngeneic mouse tumor models, synergizes with anti-PD-1, stimulates tumor secretion of interferon-β, induces tumor regression, and has long-lasting anti-tumor immunity. [3]
Targets(IC50)	STING
In vitro	**METHODS**: PK-15 cells were treated with MSA-2 at concentrations of 20, 30, 40 and 50 μM for 24 hours and then infected with SVV at 10 MOI. SVV RNA levels in treated cells were detected by RT-qPCR at 24 h post-infection (hpi). **RESULTS** Viral RNA levels in MSA-2-treated cells were significantly reduced in a dose-dependent manner. [2]
In vivo	**METHODS**: The EMT-6 mouse model was treated with MSA-2 (50 mg/kg, orally), and the changes in intratumoral cytokines and chemokines after MSA-2 treatment in vivo were explored. **RESULTS** IFN-β, IL-6, TNF-α, IFN-γ, and classical activation-associated chemokines including CCL2, CCL3, CCL4, CCL5, CXCL1, CXCL9, and CXCL10 were significantly upregulated in EMT-6 tissues. [1] **METHODS**: MSA-2 was orally administered at a single dose of 50 mg/kg to mice bearing U14 and TC-1 cervical tumor models. Mice were treated with 5 mg/kg of anti-PD-1 every other day for a total of 3 treatments. Tumor volume was assessed every other day. **RESULTS** The tumor volume of mice was significantly reduced. [2]
Animal Research	Animal Model was MC38 tumor-bearing C57BL6 mice,and The dosage was 60 mg/kg. Administration was P.o.;s.c (50 mg/kg);single dose[1]

Solubility Information

Solubility	DMSO: 255 mg/mL (866.4 mM),Sonication and heating to 80℃ are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	0.5% CMC-Na: 12.5 mg/mL (42.47 mM),Suspension. *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	3.3977 mL	16.9883 mL	33.9766 mL
5 mM	0.6795 mL	3.3977 mL	6.7953 mL
10 mM	0.3398 mL	1.6988 mL	3.3977 mL
50 mM	0.068 mL	0.3398 mL	0.6795 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

Yi M, et al. Combination of oral STING agonist MSA-2 and anti-TGF-β/PD-L1 bispecific antibody YM101: a novel immune cocktail therapy for non-inflamed tumors. J Hematol Oncol. 2022 Oct 8;15(1):142.
Li T, et al. STING agonist inflames the cervical cancer immune microenvironment and overcomes anti-PD-1 therapy resistance. Front Immunol. 2024 Mar 14;15:1342647.
Liu J, et al. Identification of MSA-2: An oral antitumor non-nucleotide STING agonist. Signal Transduct Target Ther. 2021 Jan 12;6(1):18.