Data Sheet (Cat.No.T23171)

TargetMol

Polyinosinic-polycytidylic acid

Chemical Properties

CAS No. : 24939-03-5

Formula: (C10H13N4O8P)x.(C9H14N3O8P)x

Molecular Weight: 671.406

Storage: Store at low temperature,Store under nitrogen
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	Polyinosinic-polycytidylic acid (Poly(I:C)) is a synthetic double-stranded RNA (dsRNA) analog and an agonist of TLR3 as well as retinoic acid-inducible gene I (RIG-I) and melanoma differentiation-associated protein 5 (MDA5). It can induce innate immune responses in mammals and serve as a vaccine adjuvant to enhance both innate and adaptive immunity, while modulating the tumor microenvironment and directly inducing apoptosis in cancer cells. Poly(I:C) is commonly used to establish acute respiratory distress syndrome (ARDS) animal models for studying immune responses and disease mechanisms.
Targets(IC50)	Apoptosis,Bcl-2 Family,HSP,Interleukin,Serine/threonin kinase,TLR
In vitro	**METHODS**: Cervical cancer cells HeLa, SiHa, C33A and lung cancer cells A549 were treated with polyinosinic-polycytidylic acid (0.1-1 μg/mL) for 24 h, and cell death was detected using PI Staining. **RESULTS**: Polyinosinic-polycytidylic acid effectively induced tumor cell death in a dose-dependent pattern. [1] **METHODS**: Rat astrocytes were pretreated with polyinosinic-polycytidylic acid (10-20 μg/mL) for 12 h, and then exposed to oxygen-glucose deprivation (OGD) for 12 h. The morphology of the cells was examined by microscopy. **RESULTS**: OGD induced significant cellular damage, and the cells appeared to be healthier in the group pretreated with polyinosinic-polycytidylic acid.Polyinosinic-polycytidylic acid exerted a certain degree of protective effect against OGD-induced damage in cultured astrocytes. [2]
In vivo	**METHODS**: To investigate the neuroprotective effects in an acute ischemia model, Polyinosinic-polycytidylic acid (0.3 mg/kg) was administered as a single intramuscular injection to Kun-Ming strain mice, and a model of arterial occlusion (MCAO) was constructed 2 h later. **RESULTS**: Administration of polyinosinic-polycytidylic acid significantly attenuated neurological deficits in the ischemic striatum and cortex, reduced infarct volume, and suppressed the elevation of TNFα and IL-6 levels. [2] **METHODS**: To test the antitumor activity in vivo, Polyinosinic-polycytidylic acid (1-100 μg/mouse) was intraperitoneally injected into a mouse model of metastatic tumors C57BL/6J induced by cutaneous melanoma B16-F10. **RESULTS**: Lung tumor growth stopped after a single dose of Polyinosinic-polycytidylic

In vivo	acid. Polyinosinic-polycytidylic acid has potential antitumor activity in an established mouse model of lung metastasis. [3]

Solubility Information

Solubility	H2O: 128.80 mg/mL (191.84 mM),Sonication is recommended. DMSO: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4894 mL	7.447 mL	14.894 mL
5 mM	0.2979 mL	1.4894 mL	2.9788 mL
10 mM	0.1489 mL	0.7447 mL	1.4894 mL
50 mM	0.0298 mL	0.1489 mL	0.2979 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

Meng X, et al. poly(I:C) synergizes with proteasome inhibitors to induce apoptosis in cervical cancer cells. Transl Oncol. 2022 Apr;18:101362.
Li Y, Ma X, Yue Y, et al. Rapid surface display of mRNA antigens by bacteria-derived outer membrane vesicles for a personalized tumor vaccine. Advanced Materials. 2022: 2109984.
Pan LN, et al. Toll-like receptor 3 agonist Poly I:C protects against simulated cerebral ischemia in vitro and in vivo. Acta Pharmacol Sin. 2012 Oct;33(10):1246-53.
Li Y, Ma X, Yue Y, et al. Rapid Surface Display of mRNA Antigens by Bacteria-Derived Outer Membrane Vesicles for a Personalized Tumor Vaccine. Advanced Materials. 2022: 2109984
Ma N, Chen Z, Liu G, et al.Normalizing the Immune Macroenvironment via Debulking Surgery to Strengthen Tumor Nanovaccine Efficacy and Eliminate Metastasis.ACS Nano.2022
Forte G, et al. Polyinosinic-polycytidylic acid limits tumor outgrowth in a mouse model of metastatic lung cancer. J Immunol. 2012 Jun 1;188(11):5357-64.
Yang Q, Liu T, Zhou Z, et al.A nanoformulation for immunosuppression reversal and broad-spectrum self-amplifying antitumor ferroptosis-immunotherapy.Biomaterials.2022: 121936.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481