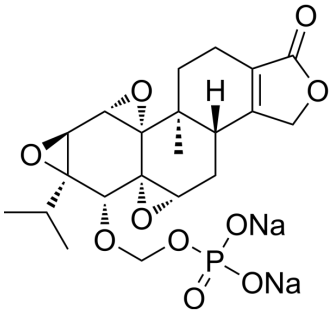
Minnelide

Cat. No.:	HY-124584
CAS No.:	1254702-87-8
Molecular Formula:	$C_{21}H_{25}Na_2O_{10}P$
Molecular Weight:	514
Target:	Apoptosis
Pathway:	Apoptosis
Storage:	4°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 93.33 mg/mL (181.58 mM; Need ultrasonic)
DMSO : 16.67 mg/mL (32.43 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.9455 mL	9.7276 mL	19.4553 mL
5 mM	0.3891 mL	1.9455 mL	3.8911 mL
10 mM	0.1946 mL	0.9728 mL	1.9455 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.67 mg/mL (3.25 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.67 mg/mL (3.25 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (3.25 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Minnelide is a prodrug of triptolide that shows potent antitumor activity in a number of tumor types, particularly in pancreatic cancer. Minnelide promotes apoptosis[1].

In Vitro

Minnelide (0-200 nM; 48 hours) shows significantly decreased cell viability in pancreatic cancer cell lines after treatment in the presence, but not in the absence, of phosphatase[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	Pancreatic cancer cell line: S2-013, MIA PaCa-2, S2-VP10, and Panc-1 cells
Concentration:	0.100 nM, 200 nM
Incubation Time:	48 hours
Result:	Decreased cell viability of in vitro.

In Vivo

Minnelide (injection intraperitoneally; 0.1-0.6 mg/kg; once daily or twice daily) leads to a marked decrease in tumor weight and volume at the end of treatment and increases survival in orthotopic model of pancreatic cancer with MIA PaCa-2–derived human pancreatic tumors[2].

Minnelide (injection intraperitoneally; 0.42 mg/kg; once daily; 28 days) prevents locoregional spread and leads to a decrease in average tumor weight in a xenograft model of pancreatic cancer with metastatic S2-013 cells[2].

Minnelide (injection intraperitoneally; 0.42 mg/kg, 0.21 mg/kg; once daily) causes tumor regression and tumors from Minnelide-treated animals showed fibrosis and the presence of pyknotic nuclei in human pancreatic cancer xenografts in SCID mice[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Orthotopic model of pancreatic cancer with MIA PaCa 2-derived human pancreatic tumors in athymic nude mice[2]
Dosage:	0.1-0.6 mg/kg
Administration:	Injection intraperitoneally; 0.1-0.6 mg/kg; once daily or twice daily
Result:	Prevented pancreatic tumor growth in vivo.

Animal Model:	Xenograft model of pancreatic cancer with metastatic S2-013 cell line in athymic nude mice[2]
Dosage:	0.42 mg/kg
Administration:	Injection intraperitoneally; 0.42 mg/kg; once daily
Result:	Prevented extensive spread from the primary site of injection.

Animal Model:	Human pancreatic cancer xenografts in SCID mice[2]
Dosage:	0.21 mg/kg, 0.42 mg/kg
Administration:	Injection intraperitoneally; 0.42 mg/kg; once daily
Result:	Reduced tumor burden in human xenografts from patients.

REFERENCES

[1]. Noel P, et al. Triptolide and Its Derivatives as Cancer Therapies. Trends Pharmacol Sci. 2019 May;40(5):327-341.

[2]. Chugh R, et al. A preclinical evaluation of Minnelide as a therapeutic agent against pancreatic cancer. Sci Transl Med. 2012 Oct 17;4(156):156ra139.

Caution: Product has not been fully validated for medical applications. For research use only.

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