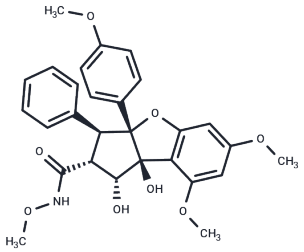
Data Sheet (Cat.No.T38753)

TargetMol
YOUR TARGET MOLECULES

CR-1-31-B

Chemical Properties



CAS No. : 1352914-52-3

Formula: C28H29NO8

Molecular Weight: 507.539

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	CR-1-31-B, a synthetic rocaglate, acts as a highly potent inhibitor of eIF4A. By disrupting the interaction between eIF4A and RNA, it effectively obstructs the initiation phase of protein synthesis. Specifically, CR-1-31-B interferes with the association between Plasmodium falciparum eIF4A (PfeIF4A) and RNA. Additionally, CR-1-31-B induces apoptosis in neuroblastoma and gallbladder cancer cells [4].
In vitro	CR-1-31-B (100 nM; 24 hours) inhibits MUC1-C translation in MCF-10A cells (EGF-stimulated)[1]. CR-1-31-B (10 and 100 nM) decreases MUC1-C abundance in MDA-MB-468 breast cancer cells[1]. CR-1-31B sensitizes gallbladder cancer cells to TRAIL-mediated apoptosis through the translational downregulation of c-FLIP[2]. Neuroblastoma (NB) cell lines exhibit decreased viability, increased apoptosis rates as well as changes in cell cycle distribution when treated with the synthetic rocaglate CR-1-31-B (24-72 hours), which clamps eIF4A and eIF4F onto mRNA, resulting in a translational block[4]. CR-1-31-B (100 nM; 5 hours) treatment increases reverse glutamine metabolism in pancreatic cancer cells[5]. Western Blot Analysis[1]Cell Line: MCF-10A cells (EGF-stimulated) Concentration: 100 nM Incubation Time: 24 hours Result: Blocked increases in MUC1-C abundance. Cell Viability Assay[4]Cell Line: SH-SY5Y cells and Kelly cells Concentration: 0.1-100 nM Incubation Time: 24-72 hours Result: A significant decrease in SH-SY5Y viability was observed at 10 nM for all time points. Significantly decreased the viability of Kelly cells at 5 nM. The calculated IC 50 at 48 h was 20 nM for SH-SY5Y and 4 nM for Kelly cells. Apoptosis Analysis[4]Cell Line: SH-SY5Y and Kelly cells Concentration: SH-SY5Y cells were treated with 10, 20, and 50 nM and Kelly cells with 1, 5, and 10 nM Incubation Time: 24-72 hours Result: Triggered apoptosis.
In vivo	CR-1-31-B, administered intraperitoneally (IP) at a dosage of 2 mg/kg in 60 μL of olive oil once every two days over 28 days, effectively reduces growth and induces TRAIL-mediated apoptosis in gallbladder cancer cells (GBC) within a BALB/c nude mouse model[2]. Additionally, at a lower dosage of 0.2 mg/kg IP daily for 7 days in a murine orthotopic transplant model of pancreatic ductal adenocarcinoma, CR-1-31-B significantly inhibits protein synthesis and tumor growth in pancreatic cancers[5].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.9703 mL	9.8514 mL	19.7029 mL
5 mM	0.3941 mL	1.9703 mL	3.9406 mL
10 mM	0.197 mL	0.9851 mL	1.9703 mL
50 mM	0.0394 mL	0.197 mL	0.3941 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.

Reference

Jin C, Rajabi H, Rodrigo CM, Porco JA Jr, Kufe D. Targeting the eIF4A RNA helicase blocks translation of the MUC1-C oncoprotein. Oncogene. 2013;32(17):2179-2188.