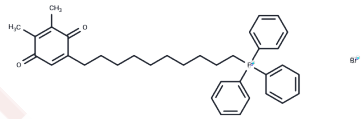
Data Sheet (Cat.No.T4168)

TargetMol

Visomitin

Chemical Properties



CAS No. : 934826-68-3

Formula: C36H42BrO2P

Molecular Weight: 617.61

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	Visomitin (SKQ1) is a mitochondria-targeted antioxidant that decreases transmembrane potential and production of reactive oxygen species (ROS).
Targets(IC50)	Reactive Oxygen Species,ROS
In vitro	Direct treatment of tumor infiltrating leukocytes with Visomitin (SkQ1) does not influence their cytotoxicity against Panc02 cells. Visomitin reduces heavily the proliferation of human PDAC cells at 500 nM concentration while not affecting the viability of the cell lines.
In vivo	In a study on pancreatic ductal adenocarcinoma (PDAC)-bearing mice, continuous treatment with Visomitin (SkQ1) was found to modify systemic angiogenic factors. Specifically, this treatment led to a decrease in serum KC levels and an increase in VEGF molecules, indicating altered angiogenesis. Additionally, Visomitin treatment resulted in reduced levels of MIP1a and prolactin, alongside elevated amounts of IL-6 and IL-13. The pretreatment setting showed a decrease in TGF-b levels. Contrarily, Visomitin treatment across all protocols reduced the percentage of NKT cells. Although the median survival of PDAC-bearing mice was prolonged with Visomitin treatment, the survival increase did not achieve statistical significance.
Cell Research	Panc02 cells are treated 48 h with different concentrations of Visomitin (SkQ1). Cell viability after Visomitin treatment is measured with an EZ4U Kit as described by the manufacturers. Brie?y, 20,000 cells per well are seeded in 96-wellplates and let grow overnight. Afterwards, cells are treated without the medium exchange. A substrate compound from the kit is added and the cells are further incubated for 5 hr at 37°C to convert the yellow colored tetrazolium to its red formazan derivate by living cells. The absorbance is measured at 450 nm
Animal Research	Female C57BL/6 mice are used in this study. For experiments on both acute and chronic pancreatitis, mice are divided in three groups. Group A (acute pancreatitis (AP) n=8; chronic pancreatitis (CP) n=12) is treated with 5?nmol/kg Visomitin (SkQ1), group B (AP n=8; CP n=12) is the untreated control, and group C (AP n=8; CP n=7) is the sham group, which is injected intraperitoneally with 0.9% NaCl instead of cerulein and is therefore the negative control group without pancreatitis. For experiments on acute pancreatitis, mice are pretreated with Visomitin for 8 weeks prior to induction of pancreatitis. Mice designated for experiments on chronic pancreatitis receive Visomitin at the same concentration for 8 weeks in parallel with induction of pancreatitis

Solubility Information

Solubility	DMSO: 55 mg/mL (89.05 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (3.24 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	1.6191 mL	8.0957 mL	16.1914 mL
5 mM	0.3238 mL	1.6191 mL	3.2383 mL
10 mM	0.1619 mL	0.8096 mL	1.6191 mL
50 mM	0.0324 mL	0.1619 mL	0.3238 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

Samuilov VD, et al. Effect of Cationic Plastoquinone SkQ1 on Electron Transfer Reactions in Chloroplasts and Mitochondria from Pea Seedlings. Biochemistry (Mosc). 2015 Apr;80(4):417-23

Wang X H, Song T Z, Zheng H Y, et al. Jejunal epithelial barrier disruption triggered by reactive oxygen species in early SIV infected rhesus macaques. Free Radical Biology and Medicine. 2021

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Li Y H, Wang X H, Huang W W, et al.Severe fever with thrombocytopenia syndrome virus induces platelet activation and apoptosis via a reactive oxygen species-dependent pathway.Redox Biology.2023: 102837.

Manskikh VN, et al. Effect of the mitochondria-targeted antioxidant SkQ1 on development of spontaneous tumors in BALB/c mice. Biochemistry (Mosc). 2014 Oct;79(10):1136-9.

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