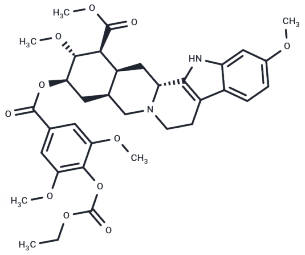
Data Sheet (Cat.No.TN2252)

TargetMol

Syrosingopine

Chemical Properties



CAS No. : 84-36-6

Formula: C35H42N2O11

Molecular Weight: 666.71

Storage: Keep away from moisture,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	Syrosingopine is a dual inhibitor of MCT1 and MCT4, 60 times more potent against MCT4, preventing lactate and H+ efflux. Syrosingopine is an orally available antihypertensive drug with potential for cancer research in combination with metformin.
Targets(IC50)	Dopamine Receptor,Monocarboxylate transporter
In vitro	**METHODS**: Metformin, phenformin, and selected mitochondrial inhibitors were titrated in HL60 cells in the presence of a fixed concentration of syrosingopine (5 μM). **RESULTS** Metformin sensitivity was altered approximately 15-fold in the presence of syrosingopine and 13-fold in the presence of phenformin.[1] **METHODS**: MDA-MB-231 cells were treated with syrosingopine (1, 5, 10, 25, 50, 75, 10 μM) to evaluate the effects of syrosingopine treatment on the extracellular acidification rate (ECAR) and intracellular acidification in MDA-MB-231 cells. **RESULTS** The extracellular acidification rate (ECAR) was significantly reduced in cells. The reduction in ECAR was stable over time and did not differ between 24 or 72 h of exposure. For the more oxidative FaDu model, a significant reduction in ECAR was observed after treatment with 25 μM syrosingopine; the pHi values of MDA-MB-231 cells were 50 μM and the pHi values of FaDu were 25 μM. [2]
In vivo	**METHODS**: Tsc1−/Pten− liver knockout mice were treated with syrosingopine (7.5 mg/kg, intraperitoneally), metformin (200 mg/kg), or the combination on alternate days for a total of 6 treatments. The in vivo efficacy of the drug combination was tested in a mouse liver cancer model. **RESULTS** After this short treatment, liver size and the number of visible tumor nodules were reduced; histological examination of liver sections showed a reduction in tumor burden. [1]

Solubility Information

Solubility	DMSO: 245 mg/mL (367.48 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: 5 mg/mL (7.5 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	1.4999 mL	7.4995 mL	14.999 mL
5 mM	0.300 mL	1.4999 mL	2.9998 mL
10 mM	0.150 mL	0.750 mL	1.4999 mL
50 mM	0.030 mL	0.150 mL	0.300 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

Benjamin D,et al. Syrosingopine sensitizes cancer cells to killing by metformin. Sci Adv. 2016 Dec 23;2(12): e1601756.

Tian L R, Lin M Z, Zhong H H, et al. Nanodrug regulates lactic acid metabolism to reprogram the immunosuppressive tumor microenvironment for enhanced cancer immunotherapy. Biomaterials Science. 2022

Buyse C, et al. Evaluation of Syrosingopine, an MCT Inhibitor, as Potential Modulator of Tumor Metabolism and Extracellular Acidification. Metabolites. 2022 Jun 17;12(6):557.

Benjamin D, et al. Dual Inhibition of the Lactate Transporters MCT1 and MCT4 Is Synthetic Lethal with Metformin due to NAD+ Depletion in Cancer Cells. Cell Rep. 2018 Dec 11;25(11):3047-3058.e4.

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