Fumitremorgin C

Cat. No.: HY-N2143

CAS No.: 118974-02-0

Molecular Formula: $C_{22}H_{25}N_3O_3$

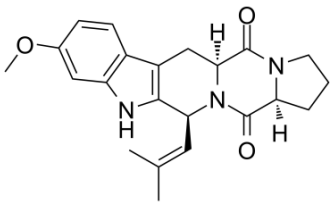
Molecular Weight: 379.45

Target: BCRP; Bacterial; Antibiotic

Pathway: Membrane Transporter/Ion Channel; Anti-infection

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (131.77 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6354 mL	13.1770 mL	26.3539 mL
	5 mM	0.5271 mL	2.6354 mL	5.2708 mL
	10 mM	0.2635 mL	1.3177 mL	2.6354 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: ≥ 3 mg/mL (7.91 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3 mg/mL (7.91 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fumitremorgin C is a potent and selective ABCG2/BRCP inhibitor.

In Vitro

Multidrug resistance (MDR) is a major problem in cancer chemotherapy. Fumitremorgin C is extremely effective in reversing resistance to mitoxantrone, doxorubicin, and topotecan in multidrug-selected cell lines. In MCF-7/mtxR (a mitoxantroneselected cell line), fumitremorgin C reverses mitoxantrone resistance (114-fold) and doxorubicin resistance (3-fold). Fumitremorgin C (5/AM)significantly potentiates the toxicity of mitoxantrone (93-fold), doxorubicin (26-fold), and topotecan (24-fold) in S1M1-3.2 cells. Reversal of resistance is associated with an increase in drug accumulation. Fumitremorgin C does not reverse drug resistance in cells with elevated expression of Pgp or MRP[1]. Fumitremorgin C almost completely reverses resistance mediated by BCRP in vitro and is a pharmacological probe for the expression and molecular action of this transporter. Fumitremorgin C also enhances the toxicity of mitoxantrone and topotecan in vector-

transfected MCF-7 cells (2.5–5.6 fold). It reduces the IC_{50} of topotecan in BCRP-overexpressing cells below that observed in the untreated vector-transfected cells. [2].

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

PROTOCOL

Cell Assay [1]

Cells are treated with chemotherapeutic agent and the reversal agents Fumitremorgin C is added to cells (0.1 to 80 /UM). In parallel wells, cells are grown in the presence of the reversal agent alone. Following a 3-day growth period, cells are fixed in 10% trichloroacetic acid for 1 h and washed extensively with water, and cell-associated protein is stained using 0.1% SRB. Excess reagent is removed by washing plates in 5% acetic acid, the dye is solubilized in 10 mM Tris base, and absorbance is determined in a UV Max spectrophotometer at 540 nm. Cell survival is determined relative to control wells[1].

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

CUSTOMER VALIDATION

- Crit Rev Anal Chem. 2021 Mar 10;1-15.

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REFERENCES

[1]. Rabindran SK, et al. Reversal of a novel multidrug resistance mechanism in human colon carcinoma cells by fumitremorgin C. Cancer Res. 1998 Dec 15;58(24):5850-8.

[2]. Rabindran SK, et al. Fumitremorgin C reverses multidrug resistance in cells transfected with the breast cancer resistance protein. Cancer Res. 2000 Jan 1;60(1):47-50.

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