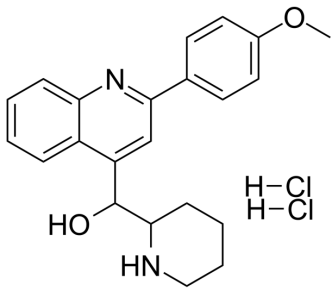
NSC23925

Cat. No.:	HY-19626
CAS No.:	858474-14-3
Molecular Formula:	$C_{22}H_{26}Cl_2N_2O_2$
Molecular Weight:	421.36
Target:	P-glycoprotein
Pathway:	Membrane Transporter/Ion Channel
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 14.29 mg/mL (33.91 mM; ultrasonic and warming and heat to 80°C)

H_2O : 4 mg/mL (9.49 mM; ultrasonic and warming and heat to 80°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.3733 mL	11.8663 mL	23.7327 mL
5 mM	0.4747 mL	2.3733 mL	4.7465 mL
10 mM	0.2373 mL	1.1866 mL	2.3733 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: ≥ 1.43 mg/mL (3.39 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.43 mg/mL (3.39 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NSC23925 is a novel, selective and effective P-glycoprotein (Pgp) inhibitor.

IC_{50} & Target

P-glycoprotein[1]

In Vitro

NSC23925 is a novel, selective and effective P-glycoprotein (Pgp) inhibitor. SKOV-3 cells with long-term exposure of 1 μM NSC23925 show stable growth in culture medium. NSC23925 specifically inhibits Pgp overexpression to prevent the emergence of paclitaxel resistance during paclitaxel treatment[1]. NSC23925 reverses chemoresistance in a wide variety of tumor types where Multidrug resistance 1 (MDR1) is highly expressed. Maximal reversal of MDR is typically seen in NSC23925 doses between 0.5 and 1 μM. The IC_{50} for NSC23925 is 8 μM in SKOV-3/SKOV-3_{TR} and 25 μM in OVCAR8/OVCAR8_{TR} cell lines, whereas the mean concentration of NSC23925 required for maximal reversal of resistance in SKOV-3_{TR} or OVCAR8_{TR} to

	cytotoxic drugs is 0.5 μM to 1 μM[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Both saline alone and NSC23925 alone treated tumors grow progressively. The usage of NSC23925 in paclitaxel chemotherapy significantly prolongs anticancer efficacy of paclitaxel[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	To determine whether NSC23925 can prevent the emergence of paclitaxel resistance, paclitaxel resistant ovarian cancer cells are used. In brief, 1×10^5 SKOV-3 cells are suspended in culture media containing paclitaxel alone, 1 μM NSC23925 alone, or paclitaxel in combination with 1 μM NSC23925. When the cells are cultured to 90% confluence, 1×10^5 cells are reseeded in a new tissue culture flask, and the paclitaxel dose is increased stepwise. The initial concentration of paclitaxel is 0.0001 μM. At different selection points cell sublines are collected and stored at liquid nitrogen for further analysis[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Nude female mice at approximately 3 to 4 weeks of age are used. To evaluate the effects of NSC23925 on the induction of paclitaxel resistance in vivo, the paclitaxel resistant cells are established in human ovarian cancer xenograft models. Briefly, on day 1, approximately 2×10^6 parental sensitive SKOV-3 cells are injected subcutaneously with Matrigel into the flanks of 3 to 4-week-old female nude mice. Administration is initiated 12 days after injection of tumor cells. The mice are randomized into 4 groups and treated intraperitoneally with either saline alone, NSC23925 alone (50 mg/kg), paclitaxel (25 mg/kg) alone, or paclitaxel (25 mg/kg) in combination with NSC23925 (50 mg/kg) twice per week for 3 weeks followed by a treatment-free interval of 2 weeks. The second round of treatment is then continued. The size of tumors is recorded twice a week beginning on day 13. Tumor volume is measured with a digital caliper and calculated according to the formula $(\text{length}\times\text{width}^2)/2$[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Yang X, et al. Nsc23925 prevents the development of paclitaxel resistance by inhibiting the introduction of P-glycoprotein and enhancing apoptosis. Int J Cancer. 2015 Oct 15;137(8):2029-39.

[2]. Duan Z, et al. NSC23925, identified in a high-throughput cell-based screen, reverses multidrug resistance. PLoS One. 2009 Oct 12;4(10):e7415.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA