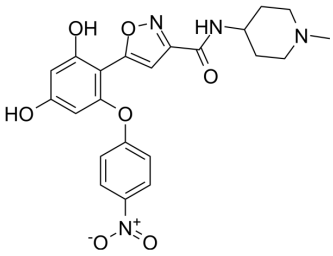
NMS-E973

Cat. No.:	HY-17547
CAS No.:	1253584-84-7
Molecular Formula:	$C_{22}H_{22}N_4O_7$
Molecular Weight:	454.43
Target:	HSP
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (110.03 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2006 mL	11.0028 mL	22.0056 mL
	5 mM	0.4401 mL	2.2006 mL	4.4011 mL
	10 mM	0.2201 mL	1.1003 mL	2.2006 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: ≥ 2.5 mg/mL (5.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (5.50 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

NMS-E973 is a potent and selective inhibitor of HSP90. NMS-E973 binds to the ATP binding site of Hsp90α with a DC_{50} of <10 nM. NMS-E973 is able to cross the blood-brain barrier (BBB). Antitumor efficacy[1].

IC_{50} & Target

HSP90α
10 nM (DC50)

In Vitro

NMS-E973 inhibits cancer cell proliferation. NMS-E973 shows a widespread antiproliferative activity, with an average IC_{50} of 1.6 μM and 15 cell lines with an IC_{50} <100 nM[1].

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

Cell Proliferation Assay[1]

Cell Line:	Carcinoma breast DU-4475, EVSA-T, CAL-51, HCC1954, BT-474, HCC1419, HDQ-P1 cells; Leukemia MV-4-11 and MOLM-13 cells; Melanoma A-375 cells
Concentration:	
Incubation Time:	24, 48, 72 hours
Result:	IC_{50}s of 13, 16, 56, 61, 73, 76, and 89 nM for DU-4475, EVSA-T, CAL-51, HCC1954, BT-474, HCC1419, HDQ-P1 cells, respectively. IC_{50}s of 29 and 35 nM for MV-4-11, MOLM-13 cells, respectively. The IC_{50} of 133 nM for A-375 cell.

In Vivo

NMS-E973 (60 mg/kg; i.v.) inhibits the growth of A375 tumors subcutaneously or intracranially implanted in mice[1].
NMS-E973 exhibits moderate elimination half-lives (5.55±1.07 h) due to high plasma clearance (39.9±1.70 mL/min/kg) combined with large volumes of distribution (5.83±3.18 L/kg) following intravenous administration (10 mg/kg) in mice[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Balb/c male nude mice (aged 6 to 8 weeks) xenografted with the A375 tumors[1]
Dosage:	60 mg/kg
Administration:	Administered twice daily i.v. according to 2 schedules: (i) every other day for 12 days and (ii) 3 days on/1 day off/3 days on (3-1-3, one cycle).
Result:	Both schedules resulted in tumor shrinkage and TGI of 74% and 89%, respectively.

CUSTOMER VALIDATION

- Theranostics. 2019 Jan 1;9(2):554-572.
- Biomedical Sciences Group, Faculty of Medicine, Department of Cellular and Molecular Medicine. KU LEUVEN. 2019 Jun.

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REFERENCES

[1]. Gianpaolo Fogliatto, et al. NMS-E973, a novel synthetic inhibitor of Hsp90 with activity against multiple models of drug resistance to targeted agents, including intracranial metastases. Clin Cancer Res. 2013 Jul 1;19(13):3520-32.

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