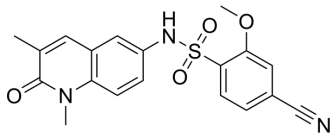
NI-57

Cat. No.:	HY-19537
CAS No.:	1883548-89-7
Molecular Formula:	$C_{19}H_{17}N_3O_4S$
Molecular Weight:	383.42
Target:	Epigenetic Reader Domain
Pathway:	Epigenetics
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (260.81 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6081 mL	13.0405 mL	26.0811 mL
	5 mM	0.5216 mL	2.6081 mL	5.2162 mL
	10 mM	0.2608 mL	1.3041 mL	2.6081 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 (6.52 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.52 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NI-57 is an inhibitor of bromodomain and plant homeodomain finger-containing (BRPF) famlily of proteins, with IC_{50}s of 3.1, 46 and 140 nM for BRPF1, BRPF2 (BRD1) and BRPF3, respectively.

IC_{50} & Target

IC50: 3.1 nM (BRPF1), 46 nM (BRPF2 (BRD1)), 140 nM (BRPF3)[1]

In Vitro

NI-57 is an inhibitor of bromodomain and plant homeodomain finger-containing (BRPF), with IC_{50}s of 3.1, 46 and 140 nM for BRPF1, BRPF2 (BRD1) and BRPF3, respectively. NI-57 binds the BRD of BRPF1 with a K_d of 31 ± 2 nM, BRD1 with a K_d of 110 ± 13 nM, and BRPF3 with a K_d of 410 ± 47 nM, whereas binding to BRD9 is weaker (K_d 1000 ± 130 nM) measured by isothermal titration calorimetry. NI-57 shows less active effect on BRD9 (IC_{50}, 520 nM) and BRD4 (BD1) (IC_{50}, 3700 nM), TRIM24 (IC_{50}, 1600 nM). NI-57 also inhibits BRPF BRDs in the nucleus, but shows little effect on the proliferation of many cancer cell lines

	with GI_{50}s of 10.4 μM (NCI-H1703 cells), 14.7 μM (DMS114), 15.6 μM (HRA-19), and 16.6 μM (RERF-LC-Sq1). Furthermore, Inhibition on BRPF1 of NI-57 (10 μM) reduces the gene expression of CCL-22 by 27.7 ± 9.4%[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	NI-57 has favorable oral bioavailability in mice[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [1]	All reagents are diluted in the recommended buffer (50 mMHEPES, 100 mM NaCl, 0.1% BSA; pH = 7.4) supplemented with 0.05% CHAPS and allowed to equilibrate to room temperature prior to addition to plates. 4 mL of HIS-tagged protein is added to low-volume 384-well plates, followed by 4 mL of either buffer, non-biotinylated peptide, solvent or compounds (NI-57, etc.). Plates are sealed and incubated at room temperature for 30 minutes, before the addition of 4 mL biotinylated peptide, resealing and incubation for a further 30 minutes. 4 mL of streptavidin-coated donor beads (25 μg/mL) and 4 μL of nickel chelate acceptor beads (25 μg/mL) are then added under low light conditions. Plates are foil sealed to protect from light, incubated at room temperature for 60 minutes and read on a PHERAstar FS plate reader using an AlphaScreenTM 680 excitation/570 emission filter set. IC_{50}s are calculated in GraphPad Prism 5. Results for compounds (NI-57, etc.) dissolved in DMSO are normalised against corresponding DMSO controls prior to IC_{50} determination, which are given as the final concentration of compound in the 20 μL reaction volume[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Igoe N, et al. Design of a Chemical Probe for the Bromodomain and Plant Homeodomain Finger-Containing (BRPF) Family of Proteins. J Med Chem. 2017 Aug 24;60(16):6998-7011.

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