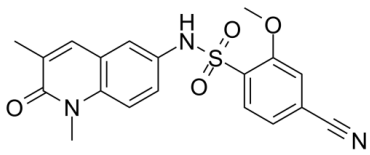
Data Sheet

Product Name:	NI-57
Cat. No.:	CS-0015636
CAS No.:	1883548-89-7
Molecular Formula:	C19H17N3O4S
Molecular Weight:	383.42
Target:	Epigenetic Reader Domain
Pathway:	Epigenetics
Solubility:	DMSO : ≥ 83.3 mg/mL (217.26 mM)



BIOLOGICAL ACTIVITY:

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. IC50 & 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]. **In Vivo:** NI-57 has favorable oral bioavailability in mice[1].

PROTOCOL (Extracted from published papers and Only for reference)

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].

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.

CAIndexNames:

Benzenesulfonamide, 4-cyano-N-(1,2-dihydro-1,3-dimethyl-2-oxo-6-quinolinyl)-2-methoxy-

SMILES:

COC1=CC(C#N)=CC=C1S(NC2=CC3=C(C=C2)N(C)C(C(C)=C3)=O)(=O)=O

Caution: Product has not been fully validated for medical applications. For research use only.

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