BN82002 hydrochloride

Cat. No.: HY-112776A

CAS No.: 1049740-43-3

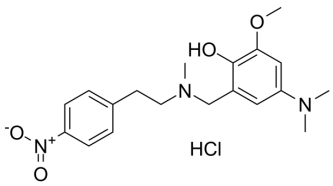
Molecular Formula: $C_{19}H_{26}ClN_3O_4$

Molecular Weight: 395.88

Target: Phosphatase

Pathway: Metabolic Enzyme/Protease

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 220 mg/mL (555.72 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5260 mL	12.6301 mL	25.2602 mL
	5 mM	0.5052 mL	2.5260 mL	5.0520 mL
	10 mM	0.2526 mL	1.2630 mL	2.5260 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: ≥ 5.5 mg/mL (13.89 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 5.5 mg/mL (13.89 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 5.5 mg/mL (13.89 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

BN82002 hydrochloride is a potent, selective and irreversible inhibitor of CDC25 phosphatase family. BN82002 hydrochloride inhibits CDC25A, CDC25B2, CDC25B3, CDC25C CDC25A, and 25C-cat with IC_{50} values of 2.4, 3.9, 6.3, 5.4, and 4.6 μM, respectively. BN82002 hydrochloride displays ~20-fold greater selectivity over CD45 tyrosine phosphatase[1].

IC_{50} & Target

IC50: 2.4 μM (CDC25A), 3.9 μM (CDC25B2), 6.3 μM (CDC25B3), 5.4 μM (CDC25C), 4.6 μM (CDC25C-cat)[1].

In Vitro

The effect of BN82002 on cell proliferation is evaluated in vitro on several human tumor cell lines. Menadione, which has been reported to inhibit cell proliferation, is used as a control. All of the examined cell lines are sensitive to BN82002 and

Menadione in a concentration-dependent manner in the low micromolar range. The most sensitive is the pancreatic cancer cell line MIA PaCa-2 with an IC_{50} of 7.2 μM, and the less sensitive cell line is the colon cancer HT-29 with an IC_{50} of 32.6 μM. The range of activity is very similar to the one observed with menadione (5-15 μM). It is also showed that 50 μM BN82002 is a concentration that fully inhibits cell proliferation, the cell cycle distribution is only modestly affected with a slight decrease in S phase and an increase in cells containing both a G1 and a G2 DNA content, suggesting that the cells treated with BN82002 are arrested at various stages of the cell cycle[1].

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

CUSTOMER VALIDATION

- PLoS Genet. 2021 Apr 26;17(4):e1009514.

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REFERENCES

[1]. Brezak MC, et al. A novel synthetic inhibitor of CDC25 phosphatases: BN82002. Cancer Res. 2004 May 1;64(9):3320-5.

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