SCH772984

Cat. No.: HY-50846

CAS No.: 942183-80-4

Molecular Formula: $C_{33}H_{33}N_9O_2$

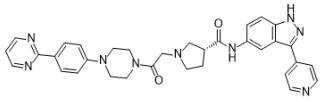
Molecular Weight: 587.67

Target: ERK

Pathway: MAPK/ERK Pathway; Stem Cell/Wnt

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 14.29 mg/mL (24.32 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.7016 mL	8.5082 mL	17.0164 mL
5 mM	0.3403 mL	1.7016 mL	3.4033 mL
10 mM	0.1702 mL	0.8508 mL	1.7016 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 (2.43 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 1.43 mg/mL (2.43 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.43 mg/mL (2.43 mM); Clear solution
4. Add each solvent one by one: 20% SBE-β-CD adjusted to pH 4-4.5 with 1 N acetic
   Solubility: 20 mg/mL (34.03 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

SCH772984 is a highly selective and ATP-competitive ERK inhibitor, with IC_{50}s of 4 and 1 nM for ERK1 and ERK2, respectively. SCH772984 has antitumor activity in MAPK inhibitor-naïve and MAPK inhibitor-resistant cells containing BRAF or RAS mutations[1].

IC_{50} & Target	ERK2 1 nM (IC_{50})	ERK1 4 nM (IC_{50})

In Vitro

SCH772984 (300 nM; 24-48hours) results in a G1 arrest in SCH772984-sensitive melanoma cells[1].
SCH772984 (3-300 nM; 24 hours) inhibits ERK and RSK phosphorylation[1].
SCH772984 shows EC_{50} values less than 500 nM in approximately 88% and 49% of BRAF-mutant (n=25) or RAS-mutant (n=35) tumor lines, respectively[1].

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

Cell Cycle Analysis[1]

Cell Line:	LOX cells (SCH772984-sensitive melanoma cells)
Concentration:	300 nM
Incubation Time:	24, 48 hours
Result:	Revealed a G1 arrest as well as an increase in the sub-G1 fraction indicative of apoptosis.

Western Blot Analysis[1]

Cell Line:	LOX $BRAF^{V600E}$ melanoma cells
Concentration:	3, 10, 30, 100, 300 nM
Incubation Time:	24 hours
Result:	A dose-dependent inhibition of phosphorylation of the ERK substrate RSK (T359/S363 phospho-RSK), and also inhibited phosphorylation of residues in the activation loop of ERK itself (T202/Y204 and T185/Y187 of ERK1 and ERK2, respectively).

In Vivo

SCH772984 (12.5-50 mg/kg; i.p.; twice daily for 14 days) leads to 98% tumor regression[1].
Dose-dependent antitumor activity is also observed in the KRAS-mutant pancreatic MiaPaCa model, with 36% regression at 50 mg/kg twice daily. Importantly, tumor regression is accompanied by robust inhibition of ERK phosphorylation in tumor tissue. SCH772984 is well tolerated on this schedule as measured by morbidity, lethality, or body weight loss[1].

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

Animal Model:	Female nude mice bearing human LOX BRAFV600E tumors[1]
Dosage:	12.5, 25, 50 mg/kg
Administration:	Intraperitoneal injection; twice daily for 14 days
Result:	Tumor regressions were observed at all doses, such as 17% at 12.5 mg/kg, 84% at 25 mg/kg, and 98% at 50 mg/kg).

CUSTOMER VALIDATION

- Sci Transl Med. 2018 Jul 18;10(450). pii: eaaq1093.
- Cancer Res. 2018 Feb 15;78(4):891-908.
- ACS Appl Mater Interfaces. 2019 Sep 18;11(37):34268-34281.
- Theranostics. 2020 Feb 18;10(8):3579-3593.
- Theranostics. 2018 Jul 30;8(15):4262-4278.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Morris EJ, et al. Discovery of a novel ERK inhibitor with activity in models of acquired resistance to BRAF and MEK inhibitors. Cancer Discov. 2013 Jul;3(7):742-50.

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