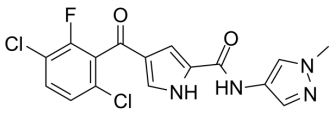
ERK5-IN-4

Cat. No.:	HY-150606
CAS No.:	1888305-17-6
Molecular Formula:	$C_{16}H_{11}Cl_2FN_4O_2$
Molecular Weight:	381.19
Target:	ERK
Pathway:	MAPK/ERK Pathway; Stem Cell/Wnt
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

ERK5-IN-4 (compound 34b) is a potent and selective inhibitor of extracellular signal-related kinase 5 (ERK5). ERK5-IN-4 inhibits ERK5 (full-length) and truncated ERK5 (ERK5 ΔTAD) kinase activity in HEK293 cells with an IC_{50} of 77 nM and 300 nM, respectively[1].

IC_{50} & Target

ERK5

In Vitro

ERK5-IN-4 (compound 34b) is selective against MAP3K, p38 (IC_{50}>30 μM) and BRD4 (IC_{50}>20 μM), in contrast to many reported ERK5 inhibitors[1].

ERK5-IN-4 (0-100 μM; 72 h) suppresses ERK5 kinase activity in HEK293 cells and (0-1 μM; 72 h) induces paradoxical activation of ERK5 transcriptional activity, thus resulting in C-terminal transcriptional activation domain (TAD) separated from the nuclear localization sequence (NLS) and results ERK5 nuclear translocation[1].

ERK5-IN-4 inhibits cancer cells with GI_{50} of 19.6 μM (HEK293), 22.3 μM (A498), 25 μM (SJSA-1), 26.6 μM (MDA-MB-231) following a 72 h incubation[1].

ERK5-IN-4 exhibits kinome selectivity K_d of 1.2 μM, 0.29 μM, 0.046 μM, 0.061 μM, 0.18 μM, 0.38 μM, 1.3 μM, 0.42 μM, 0.22 μM, 2.8 μM against ABL1-nonphosphorylated, AURKA, CSF1R, DCAMKL1 (DCLK1), ERK5 (MAPK7), FGFR1, JAK3 (JH1domain-catalytic), KIT, LRRK2, MEK5 (MAP2K5)[1].

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

Western Blot Analysis[1]

Cell Line:	HeLa cells
Concentration:	0.01, 0.03, 0.1, 0.3, 1, 3 μM
Incubation Time:	1 h
Result:	Resulted upper phospho-ERK5 band with EGF stimulation and inhibition.

In Vivo

ERK5-IN-4 (compound 34b) (p.o.; 10 mg/kg) has low clearance and an oral bioavailability of 42% in the mouse[1].

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

Animal Model:	Pharmacokinetic Parameters for ERK5-IN-4[1]
Dosage:	

Administration:	
Result:	

Route	Dose (mg/kg)	Cl (mL/min/kg)	V_d (L/kg)	$t_{1/2}$ (min)	BA (%)
i.v. or p.o.	10	14	0.6	80	42

REFERENCES

[1]. Miller DC, et al. Parallel Optimization of Potency and Pharmacokinetics Leading to the Discovery of a Pyrrole Carboxamide ERK5 Kinase Domain Inhibitor. J Med Chem. 2022 May 12. 65(9):6513-6540.

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