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产品名称：
N-(12-Cyanindolizino[2,3-b]quinoxalin-2-yl)-2-thiophenecarboxamide
产品别名：HI-TOPK-032

生物活性：

Description	HI-TOPK-032 is a potent and specific TOPK inhibitor.
In Vitro	HI-TOPK-032 strongly suppresses TOPK kinase activity but has little effect on extracellular signal-regulated kinase 1 (ERK1), c-jun-NH2-kinase 1, or p38 kinase activities. HI-TOPK-032 occupies the ATP-binding site of TOPK and fits the binding site very well. The compound forms hydrogen bonds with GLY83 and ASP151 and has a hydrophobic interaction with LYS30. However, HI-TOPK-032 at the highest concentration (5 μM) also inhibits MEK1 activity by 40%. HI-TOPK-032 also inhibits anchorage-dependent and -independent colon cancer cell growth by reducing ERK-RSK phosphorylation as well as increasing colon cancer cell apoptosis through regulation of the abundance of p53, cleaved caspase-7, and cleaved PARP[1].
In Vivo	Treatment of mice with 1 or 10 mg/kg of HI-TOPK-032 significantly inhibits HCT-116 tumor growth by more than 60% relative to the vehicle-treated group. Mice are well tolerated with HI-TOPK-032 treatment. The expression of p53 is strongly induced, and phosphorylation of ERK and RSK, a direct downstream protein of ERK, is markedly inhibited in the HI-TOPK-032-treated group[1].
Solvent&Solubility	***In Vitro:*** **DMSO : ≥ 7.5 mg/mL (20.30 mM)** * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.7071 mL	13.5355 mL	27.0709 mL
5 mM	0.5414 mL	2.7071 mL	5.4142 mL
10 mM	0.2707 mL	1.3535 mL	2.7071 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

References	[1]. Kim DJ, et al. Novel TOPK inhibitor HI-TOPK-032 effectively suppresses colon cancer growth. Cancer Res. 2012 Jun 15;72(12):3060-8.

实验参考：

Cell Assay	HCT-116 colon cancer cells are treated with different doses of HI-TOPK-032 (1, 2, 5 μM). After incubation for 1, 2, or 3 days, 20 μL of CellTiter96 AQueous One Solution is added and then cells are incubated for 1 hour at 37°C in a 5% CO_2 incubator. Absorbance is measured at 492 nm[1].
Animal Administration	Mice: Mice are divided into 4 groups: (i) untreated vehicle group; (ii) 1 mg HI-TOPK-032/kg of body weight; (iii) 10 mg HI-TOPK-032/kg of body weight; and (iv) no cells and 10 mg HI-TOPK-032/kg of body weight. HCT-116 cells are suspended in serum-free McCoy 5A medium and inoculated s.c. into the right flank of each mouse. HI-TOPK-032 or vehicle is injected 3 times per week for 25 days.

	Tumor volume is calculated[1].
Kinase Assay	The effect of HI-TOPK-032 on ERK1, JNK1, and p38 activity is assessed by an *in vitro* kinase assay using ERK1 (active, 500 ng), inactive RSK2 (ERK1 substrate, 1 μg), JNK1 (active, 50 ng), c-Jun (JNK1 substrate, 1 μg) and p38 (active, 200 ng), and ATF2 (p38 substrate, 500 ng) with [γ-^{32}P]ATP. Briefly, the reaction is carried out in the presence of 10 μCi of [γ-^{32}P]ATP with HI-TOPK-032 (0.5, 1, 2, 5 μM) in 40 μL of reaction buffer. After incubation at room temperature for 30 minutes, the reaction is stopped by adding 10 μL protein loading buffer and the mixture is separated by SDS-PAGE[1].
References	[1]. Kim DJ, et al. Novel TOPK inhibitor HI-TOPK-032 effectively suppresses colon cancer growth. Cancer Res. 2012 Jun 15;72(12):3060-8.