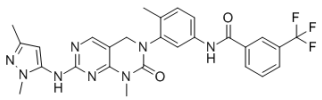
Pluripotin

Cat. No.:	HY-10579
CAS No.:	839707-37-8
Molecular Formula:	$C_{27}H_{25}F_3N_8O_2$
Molecular Weight:	550.54
Target:	Ribosomal S6 Kinase (RSK); 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 : ≥ 33 mg/mL (**59.94 mM**)
H_2O : < 0.1 mg/mL (insoluble)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.8164 mL	9.0820 mL	18.1640 mL
5 mM	0.3633 mL	1.8164 mL	3.6328 mL
10 mM	0.1816 mL	0.9082 mL	1.8164 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: ≥ 2.5 mg/mL (4.54 mM); Clear solution
2. Add each solvent one by one: **10% DMSO >> 90% (20% SBE-β-CD in saline)**
   Solubility: 2.5 mg/mL (4.54 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: **10% DMSO >> 90% corn oil**
   Solubility: ≥ 2.5 mg/mL (4.54 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Pluripotin is a dual inhibitor of **ERK1** and **RasGAP** with **K_D**s of 98 nM and 212 nM, respectively. Pluripotin also inhibits **RSK1**, **RSK2**, **RSK3**, and **RSK4** with **IC_{50}**s of 0.5, 2.5, 3.3, and 10.0 μM, respectively.

IC_{50} & Target	ERK1	RasGAP	RSK1	RSK2

	98 nM (Kd)	212 nM (Kd)	0.5 μM (IC_{50})	2.5 μM (IC_{50})
	RSK3 3.3 μM (IC_{50})	RSK4 10 μM (IC_{50})		
In Vitro	Pluripotin (SC-1) inhibits Abl1, p70S6K, PLK2, RSK1, RSK2, RSK3, RSK4 with IC_{50}s of 0.005, 1.4, 2.2, 0.5, 2.5, 3.3, 10.0 μM,respectively. Pluripotin (SC-1) decreases cell growth for 7 colon tumor cell lines. After a five day exposure to 0.1 μM SC-1, the seven colon tumor lines are evaluated for changes in cell number and viability. There is a statistically significant decrease in cell number but >95% viability[2].			

PROTOCOL

Cell Assay [2]

The seven colon cancer lines (COLO 205, HCC-2998, HCT-15, HCT-116, HT29, KM12, SW-620) are used. In all experiments, each tumor line is cultured in 60 mm^2 tissue culture treated dishes at an initial concentration of 62,500/mL (total 4 mL) before addition of **0.1 μM Pluripotin (SC-1)** or an equivalent amount of diluent (DMSO) the next day. Five day exposures are conducted. The final concentration utilized for treatment for all tumor lines is determined by evaluating a range of SC-1 concentrations (0.01 to 10 μM) for sphere formation and any cytotoxic effects in the HCT-116 tumor line. Cell viability is routinely evaluated with the trypan blue exclusion test and is always >95% for concentrations at or below 0.1 μM[2].

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

REFERENCES

[1]. Chen S, et al. Self-renewal of embryonic stem cells by a small molecule. Proc Natl Acad Sci U S A. 2006 Nov 14;103(46):17266-71.

[2]. Mertins SD, et al. A small molecule (pluripotin) as a tool for studying cancer stem cell biology: proof of concept. PLoS One. 2013;8(2):e57099.

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