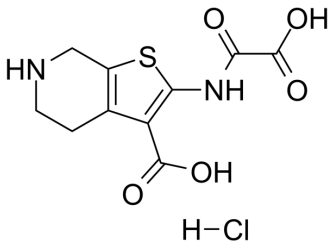
TCS 401

Cat. No.:	HY-12312
CAS No.:	243966-09-8
Molecular Formula:	$C_{10}H_{11}ClN_2O_5S$
Molecular Weight:	306.72
Target:	Phosphatase
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

0.1 M NaOH : 6.67 mg/mL (21.75 mM; ultrasonic and adjust pH to 9 with NaOH)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.2603 mL	16.3015 mL	32.6030 mL
	5 mM	0.6521 mL	3.2603 mL	6.5206 mL
	10 mM	0.3260 mL	1.6302 mL	3.2603 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

TCS 401 is a selective inhibitor of protein tyrosine phosphatase 1B (PTP1B).

In Vitro

TCS-401 (0.5, 1, 2 μM) significantly increases the proliferation of RPE cells. TCS-401 significantly increases the expression of cyclin A and cyclin D1 at the concentrations of 1 and 2 μM in a concentration-dependent manner. TCS-401 at concentrations of 0.5, 1, and 2 μM significantly increases phosphorylation of Erk and Akt compared to the control group. The activation of Erk and Akt by TCS-401 is blocked by pretreatment with PD98059 and LY294002, respectively. CS-401 treatment activates the MEK/Erk and PI3K/Akt signaling pathways and induces proliferation, differentiation, and migration in RPE cells[1]. CS-401 dose dependently inhibits the RPTC-Sup-induced reduction of fibronectin and α-SMA. At 1 μM, TCS-401 reverses the levels of fibronectin and α-SMA about onefold and at a dose of 2 μM, TCS-401 brings back fibronectin and α-SMA expression to near normal levels[2].

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

PROTOCOL

Cell Assay [1]

Cell proliferation are examined using MTT assay. The 5×10^3 cells grown in a 96-well plate for 24 h are partially starved in

DMEM/F12 supplemented with 1% FBS for 12 h, and then stimulated with various concentrations of TCS-401 for an additional 24 h. MTT are added to the culture medium, and the cells are incubated for an additional 4 h. The formazan crystals formed are then dissolved by adding dimethyl sulfoxide (100 μL per well). Absorbance at 490 nm are measured using a microplate reader.

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

CUSTOMER VALIDATION

- J Tissue Eng Regen Med. 2020 Apr;14(4):575-587.
- In Vitro Cell Dev Biol Anim. 2019 Dec;55(10):801-811.

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REFERENCES

[1]. Du ZD, et al. Protein tyrosine phosphatase 1B regulates the activity of retinal pigment epithelial cells. Mol Vis. 2015 May 1;21:523-31.

[2]. Ponnusamy M, et al. Necrotic renal epithelial cell inhibits renal interstitial fibroblast activation: role of protein tyrosine phosphatase 1B. Am J Physiol Renal Physiol. 2013 Mar 15;304(6):F698-709.

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