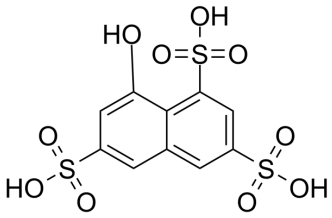
ζ-Stat

Cat. No.:	HY-123979
CAS No.:	3316-02-7
Molecular Formula:	$C_{10}H_8O_{10}S_3$
Molecular Weight:	384.36
Target:	PKC; Apoptosis
Pathway:	Epigenetics; TGF-beta/Smad; Apoptosis
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 62.5 mg/mL (162.61 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6017 mL	13.0086 mL	26.0173 mL
	5 mM	0.5203 mL	2.6017 mL	5.2035 mL
	10 mM	0.2602 mL	1.3009 mL	2.6017 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (260.17 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

ζ-Stat (NSC37044) is a specific and atypical PKC-ζ inhibitor, with an IC_{50} of 5 μM. ζ-Stat can reduce melanoma cell lines proliferation and induce apoptosis, and has antitumor activity in vitro[1][2].

IC_{50} & Target

aPKC-ζ
5 μM (IC_{50})

In Vitro

ζ-Stat (0.1-20 μM) shows only 13% inhibition on PKC-ι at 20 μM, but shows a significant inhibition on PKC-ζ as 51% at 5 μM level[1].
ζ-Stat (0.1-10 μM; 3 d) significantly decreases cell proliferation of SK-MEL-2 and MeWo upon increasing the concentrations[1].
ζ-Stat (7 or 10 μM; 24-72 h) and 5-FU in combination is able to decrease the viability of LoVo CRC cells by more than 75%[2].
ζ-Stat (5 μM; 3 d) shows a significant diminution of phosphorylated, total PKC-ζ, Bcl-2 and PARP levels, and increases Caspase-3 and cleaved-PARP levels in SK-MEL-2 and MeWo cells[1].

ζ-Stat (5 μM; 1-10 h) does not show significant cytotoxicity on MEL-F-NEO, SK-MEL-2 and MeWo cells[1].

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

Cell Proliferation Assay[1]

Cell Line:	MEL-F-NEO, SK-MEL-2 and MeWo cells
Concentration:	0.1, 0.5, 1, 2.5, 5, 7.5, 10 μM
Incubation Time:	3 days
Result:	Decreased proliferation by 47.7% for 5 μM in SK-MEL-2 cells and by 50.6% for 5 μM in MeWo cells. Showed significant inhibitions on MEL-F-NEO cells 19.3% ($P \leq 0.05$) at 10 μM.

Western Blot Analysis[1]

Cell Line:	SK-MEL-2 and MeWo cells
Concentration:	5 μM
Incubation Time:	3 days
Result:	Decreased phosphorylated and total PKC-ζ levels.

REFERENCES

[1]. Ratnayake WS, et, al. Oncogenic PKC-ι activates Vimentin during epithelial-mesenchymal transition in melanoma; a study based on PKC-ι and PKC-ζ specific inhibitors. Cell Adh Migr. 2018; 12(5):447-463.

[2]. Islam SMA, et, al. Atypical Protein Kinase-C inhibitors exhibit a synergistic effect in facilitating DNA damaging effect of 5-fluorouracil in colorectal cancer cells. Biomed Pharmacother. 2020 Jan; 121:109665.

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