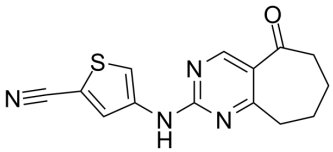
G6PDi-1

Cat. No.:	HY-W107464
CAS No.:	2457232-14-1
Molecular Formula:	$C_{14}H_{12}N_4OS$
Molecular Weight:	284.34
Target:	PDI
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease
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 : 50 mg/mL (175.85 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.5169 mL	17.5846 mL	35.1692 mL
5 mM	0.7034 mL	3.5169 mL	7.0338 mL
10 mM	0.3517 mL	1.7585 mL	3.5169 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (8.79 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

G6PDi-1 is a reversible and non-competitive glucose-6-phosphate dehydrogenase (G6PD) inhibitor with an IC_{50} of 0.07 μM for human G6PD. G6PDi-1 depletes NADPH most strongly in lymphocytes. G6PDi-1 markedly decreases inflammatory cytokine production in T cells[1].

In Vitro

G6PDi-1 (10 μM, 2 h) increases the $NADP^+$/NADPH ratio in mouse CD8+ and CD4+ T cells[1].
G6PDi-1 (50 μM, 0-300 min) inhibits mouse and human neutrophil oxidative burst[1].
G6PDi-1 inhibits the activity of G6PDH in lysates of cultured astrocytes with an IC_{50} of 102 nM, and lowers the total cellular WST1 reduction (0-100 μM, 60 min)[2].
G6PDi-1 (0-100 μM,) in combination with CB-839 (0-48 nM) shows synergistic cytotoxicity against A549 (KEAP1 mutant) cells and KPK (Keap1 KO) cells[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Watermann P, et al. G6PDi-1 is a Potent Inhibitor of G6PDH and of Pentose Phosphate pathway-dependent Metabolic Processes in Cultured Primary Astrocytes. Neurochem Res. 2023 Oct;48(10):3177-3189.

[2]. Ding H, et al. Activation of the NRF2 antioxidant program sensitizes tumors to G6PD inhibition. Sci Adv. 2021 Nov 19;7(47):eabk1023.

[3]. Jonathan M Ghergurovich, et al. A small molecule G6PD inhibitor reveals immune dependence on pentose phosphate pathway. Nat Chem Biol. 2020 Jul;16(7):731-739.

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