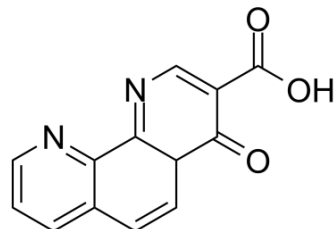


1,4-DPCA

Cat. No.:	HY-121172		
CAS No.:	331830-20-7		
Molecular Formula:	C ₁₃ H ₈ N ₂ O ₃		
Molecular Weight:	240.21		
Target:	HIF/HIF Prolyl-Hydroxylase		
Pathway:	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 : 12.5 mg/mL (52.04 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	4.1630 mL	20.8151 mL	41.6302 mL
		5 mM	0.8326 mL	4.1630 mL	8.3260 mL
10 mM		0.4163 mL	2.0815 mL	4.1630 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	1. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 0.92 mg/mL (3.83 mM); Clear solution				

BIOLOGICAL ACTIVITY

Description	1,4-DPCA, a potent prolyl-4-hydroxylase inhibitor, is a collagen hydroxylation inhibitor in human foreskin fibroblasts with an IC ₅₀ of 2.4 μM. 1,4-DPCA inhibits prolyl-4-hydroxylases α isoforms stabilizes HIF-1α protein. 1,4-DPCA also inhibits factor inhibiting HIF (FIH) with an IC ₅₀ of 60 μM ^{[1][2]} .
IC ₅₀ & Target	IC ₅₀ : 2.4 μM (Collagen hydroxylation); 60 μM (Factor inhibiting HIF (FIH)) ^[2]
In Vitro	1,4-DPCA (24 hours) treatment specifically increases the expression of multiple target genes, including the proangiogenic target genes Vegfa and Hmox1 and proglycolytic targets Ldh-a, Pdgk1, Pdk1, and Glut1 in mouse B6 cells ^[1] . 1,4-DPCA treatment significantly reduces the colony sizes of T4-2 (10 μM 1,4-DPCA) and ZR-75-1 cells (20 μM 1,4-DPCA). 1,4-DPCA-treated T4-2 cells form polarized spheroids in 3D culture. 1,4-DPCA treatment significantly reduces invasive branches in DA-MB-157 (20 μM 1,4-DPCA) and MDA-MB-231 (10 μM 1,4-DPCA) cells. 1,4-DPCA inhibits the proliferation of T4-2, ZR-75-1, MDA-MB-157 and MDA-MB-231 cells ^[3] .

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

In Vivo

1,4-DPCA treatment suppresses connective tissue ingrowth in porous porous poly (lactic-co-glycolic acid) (PLGA) discs implanted in the peritoneal cavity for 28 days in mice. 1,4-DPCA is found to be effective at inhibiting collagen deposition within and on the outer surface of the disc, and also limited connective tissue ingrowth, but not to the extent of glucocorticoid inhibition^[2].

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

REFERENCES

- [1]. Yong Zhang, et al. Drug-induced regeneration in adult mice. *Sci Transl Med*. 2015 Jun 3;7(290):290ra92.
- [2]. Ryan J Love, et al. Transient inhibition of connective tissue infiltration and collagen deposition into porous poly(lactic-co-glycolic acid) discs. *J Biomed Mater Res A*. 2013 Dec;101(12):3599-606.
- [3]. Gaofeng Xiong, et al. Prolyl-4-hydroxylase α subunit 2 promotes breast cancer progression and metastasis by regulating collagen deposition. *BMC Cancer*. 2014 Jan 2;14:1.
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Caution: Product has not been fully validated for medical applications. For research use only.

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