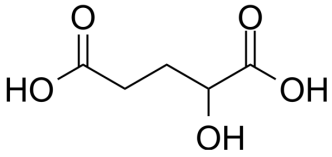
α-Hydroxyglutaric acid

Cat. No.:	HY-113038B
CAS No.:	2889-31-8
Molecular Formula:	$C_5H_8O_5$
Molecular Weight:	148.11
Target:	Histone Demethylase; Endogenous Metabolite
Pathway:	Epigenetics; Metabolic Enzyme/Protease
Storage:	Solution, -20°C, 2 years



BIOLOGICAL ACTIVITY

Description	α-Hydroxyglutaric acid (2-Hydroxyglutarate) is an α-hydroxy acid form of glutaric acid. α-Hydroxyglutaric acid is a competitive inhibitor of multiple α-ketoglutarate-dependent dioxygenases, including histone demethylases and the TET family of 5-methlycytosine (5mC) hydroxylases[1].	
IC_{50} & Target	Microbial Metabolite	Human Endogenous Metabolite
In Vitro	Isocitrate Dehydrogenase 1 (IDH1) and IDH2 mutations occur frequently in gliomas and acute myeloid leukemia, leading to simultaneous loss and gain of activities in the production of α-ketoglutarate (α-KG) and α-Hydroxyglutaric acid (2-Hydroxyglutarate), respectively[1]. α-Hydroxyglutaric acid (2-Hydroxyglutarate) inhibits the activity of multiple histone demethylases. α-Hydroxyglutaric acid occupies the same space as α-KG does in the active site of histone demethylases. α-Hydroxyglutaric acid (2-Hydroxyglutarate) inhibits the activity of TET 5-methylcytosine hydroxylases[1]. Treatment of U-87MG cells with α-Hydroxyglutaric acid (2-Hydroxyglutarate; 10-50 mM) increases HIF-1α and decreases endostatin[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

REFERENCES

[1]. Wei Xu, et al. Oncometabolite 2-hydroxyglutarate is a competitive inhibitor of α-ketoglutarate-dependent dioxygenases. Cancer Cell. 2011 Jan 18;19(1):17-30.

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