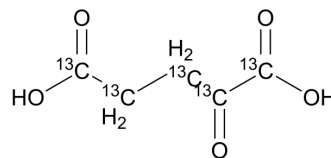


2-Ketoglutaric acid-¹³C₅

Cat. No.:	HY-W013636S		
CAS No.:	161096-83-9		
Molecular Formula:	¹³ C ₅ H ₆ O ₅		
Molecular Weight:	151.06		
Target:	Tyrosinase; Endogenous Metabolite		
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 : 250 mg/mL (1654.97 mM; Need ultrasonic)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	6.6199 mL	33.0994 mL	66.1989 mL
5 mM	1.3240 mL	6.6199 mL	13.2398 mL
10 mM	0.6620 mL	3.3099 mL	6.6199 mL

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

BIOLOGICAL ACTIVITY

Description

2-Ketoglutaric acid-¹³C₅ is the ¹³C labeled 2-Ketoglutaric acid[1]. 2-Ketoglutaric acid (Alpha-Ketoglutaric acid) is an intermediate in the production of ATP or GTP in the Krebs cycle. 2-Ketoglutaric acid also acts as the major carbon skeleton for nitrogen-assimilatory reactions. 2-Ketoglutaric acid is a reversible inhibitor of tyrosinase (IC50=15 mM)[2].

In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs^[1].

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

REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019 Feb;53(2):211-216.

[2]. Huergo LF, et al. The Emergence of 2-Oxoglutarate as a Master Regulator Metabolite. *Microbiol Mol Biol Rev*. 2015 Dec;79(4):419-35.

[3]. Gou L, et al. The effect of alpha-ketoglutaric acid on tyrosinase activity and conformation: Kinetics and molecular dynamics simulation study. *Int J Biol Macromol*. 2017 Dec105(Pt 3):1654-1662.

Caution: Product has not been fully validated for medical applications. For research use only.

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