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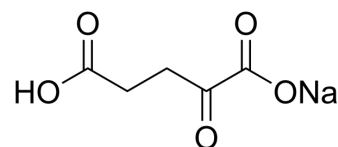
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2-Ketoglutaric acid Sodium

Cat. No.:	HY-W013636A
CAS No.:	22202-68-2
Molecular Formula:	C ₅ H ₅ NaO ₅
Molecular Weight:	168.08
Target:	Endogenous Metabolite; Tyrosinase
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, sealed storage, away from moisture
	* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 5.88 mg/mL (34.98 mM; ultrasonic and warming and heat to 60°C)					
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
		1 mM	5.9495 mL	29.7477 mL	59.4955 mL	
		5 mM	1.1899 mL	5.9495 mL	11.8991 mL	
		10 mM	0.5950 mL	2.9748 mL	5.9495 mL	
Please refer to the solubility information to select the appropriate solvent.						

BIOLOGICAL ACTIVITY

Description	2-Ketoglutaric acid Sodium (Alpha-Ketoglutaric acid Sodium) is an intermediate in the production of ATP or GTP in the Krebs cycle. 2-Ketoglutaric acid Sodium also acts as the major carbon skeleton for nitrogen-assimilatory reactions. 2-Ketoglutaric acid Sodium is a reversible inhibitor of tyrosinase (IC ₅₀ =15 mM) ^{[1][2]} .		
IC ₅₀ & Target	Human Endogenous Metabolite	Microbial Metabolite	Tyrosinase 15 mM (IC ₅₀)
In Vitro	2-Ketoglutaric acid Sodium (Alpha-Ketoglutaric acid Sodium) has other physiological capabilities including reduction of ammonia level formed in the lung and general ammonia detoxification, protective role against lipid peroxidation and neuroprotective effect against cyanide poisoning^[1]. 2-Ketoglutaric acid Sodium acts as precursor for the synthesis of amino acids and nucleotides^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

CUSTOMER VALIDATION

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- Gut Microbes. 2023 Jan-Dec;15(1):2186114.
 - Redox Biol. 2024 Mar 4;71:103112.
 - PLoS Pathog. 2024 Jun 21;20(6):e1012305.

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REFERENCES

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

[2]. 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 Dec;105(Pt 3):1654-1662.

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

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