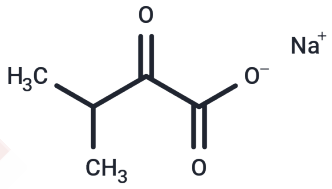
Data Sheet (Cat.No.T37153)

TargetMol

Sodium 3-methyl-2-oxobutanoate

Chemical Properties



CAS No. : 3715-29-5

Formula: C5H7NaO3

Molecular Weight: 138.10

Storage: Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Sodium 3-methyl-2-oxobutanoate is a precursor of pantothenic acid in Escherichia coli.
Targets(IC50)	Endogenous Metabolite
In vitro	Methods: The role of sodium 3-methyl-2-oxobutanoate (α-Ketoisovaleric acid sodium) in Escherichia coli and in vivo metabolism was investigated. Results: Sodium 3-methyl-2-oxobutanoate (α-Ketoisovaleric acid sodium) serves as a precursor of pantothenic acid in Escherichia coli. It increases the levels of α-ketoisocaproate and α-keto-β-methylvalerate, decreases the contents of their corresponding amino acids, causes an early decrease in ornithine, and a late increase in plasma arginine [1,2].
In vivo	Methods: The mechanism of action of sodium 3-methyl-2-oxobutanoate (α-Ketoisovaleric acid sodium) was investigated in rat models. Results: Sodium 3-methyl-2-oxobutanoate (α-Ketoisovaleric acid sodium) induces convulsions in rats through GABAergic and glutamatergic mechanisms [3].

Solubility Information

Solubility	Ethanol: Insoluble H2O: 80.00 mg/mL (579.29 mM),Sonication is recommended. DMSO: 40.00 mg/mL (289.65 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.2411 mL	36.2056 mL	72.4113 mL
5 mM	1.4482 mL	7.2411 mL	14.4823 mL
10 mM	0.7241 mL	3.6206 mL	7.2411 mL
50 mM	0.1448 mL	0.7241 mL	1.4482 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

MAAS WK, et al. alpha-Ketoisovaleric acid, a precursor of pantothenic acid in Escherichia coli. J Bacteriol. 1953 Apr; 65(4):388-93.
Schauder P, et al. Oral administration of alpha-ketoisovaleric acid or valine in humans: blood kinetics and biochemical effects. J Lab Clin Med. 1984 Apr;103(4):597-605.
Coitinho AS, et al. Pharmacological evidence that alpha-ketoisovaleric acid induces convulsions through GABAergic and glutamatergic mechanisms in rats. Brain Res. 2001 Mar 9;894(1):68-73.