β-Alanine

Cat. No.: HY-N0230

CAS No.: 107-95-9

Molecular Formula: $C_3H_7NO_2$

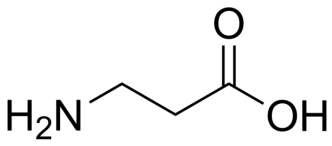
Molecular Weight: 89.09

Target: Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

H_2O : 33.33 mg/mL (374.12 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	11.2246 mL	56.1230 mL	112.2460 mL
	5 mM	2.2449 mL	11.2246 mL	22.4492 mL
	10 mM	1.1225 mL	5.6123 mL	11.2246 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (561.23 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

β-Alanine is a non-essential amino acid that is shown to be metabolized into carnosine, which functions as an intracellular buffer.

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

Cells treated with β-alanine display significantly suppressed basal and peak ECAR (aerobic glycolysis), with simultaneous increase in glucose transporter 1 (GLUT1). Additionally, cells treated with β-alanine exhibit significantly reduced basal and peak OCR (oxidative metabolism), which is accompanied by reduction in mitochondrial content with subsequent suppression of genes which promote mitochondrial biosynthesis. Suppression of glycolytic and oxidative metabolism by β-alanine results in the reduction of total metabolic rate, although cell viability is not affected.β-alanine is shown to reduce both cell migration and proliferation without acting in a cytotoxic fashion. Moreover, β-alanine significantly increases malignant cell sensitivity to doxorubicin, suggesting a potential role as a co-therapeutic agent[1].

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

REFERENCES

[1]. Vaughan RA, et al. β-alanine suppresses malignant breast epithelial cell aggressiveness through alterations in metabolism and cellular acidity in vitro. Mol Cancer. 2014 Jan 24;13:14.

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