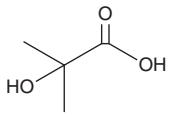
PRODUCT INFORMATION

2-Hydroxyisobutyric Acid

Item No. 43901

CAS Registry No.: 594-61-6
Formal Name: 2-hydroxy-2-methyl-propanoic acid
Synonyms: Acetonic Acid, 2-HIBA, 2-Methyllactic Acid, NSC 4505, NSC 402158
MF: $C_4H_8O_3$
FW: 104.1
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

2-Hydroxyisobutyric acid is supplied as a solid. A stock solution may be made by dissolving the 2-hydroxyisobutyric acid in the solvent of choice, which should be purged with an inert gas. 2-Hydroxyisobutyric acid is soluble (≥10 mg/ml) in ethanol and DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 2-hydroxyisobutyric acid can be prepared by directly dissolving the solid in aqueous buffers. 2-Hydroxyisobutyric acid is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

Hydroxyisobutyric acid is a metabolism modifying agent.[1,2] It inhibits glutathione-induced decreases in NAD/NADH ratios, ATP levels, and maximal and basal oxygen consumption rates in PC12 adrenal medulla cells.[1] 2-Hydroxyisobutyric acid (10 mM) increases lipid droplet size, decreases reactive oxygen species (ROS), and increases lifespan in *C. elegans*.[2] It reduces blood glucose levels, decreases the latency to escape in the Barnes maze test, and increases brain Bdnf, nerve growth factor (Ngf), and glutathione (GSH) levels in a *db/db* mouse model of diabetic neuropathy when administered at doses of 15 or 30 mg/kg per day.[1]

References

1. Xie, M., Gu, S., Liu, Y., *et al.* 2-Hydroxyisobutyric acid targeted binding to MT-ND3 boosts mitochondrial respiratory chain homeostasis in hippocampus to rescue diabetic cognitive impairment. *Redox Biol.* **79**, 103446 (2025).
2. Schifano, E., Conta, G., Preziosi, A., *et al.* 2-hydroxyisobutyric acid (2-HIBA) modulates ageing and fat deposition in *Caenorhabditis elegans*. *Front. Mol. Biosci.* **9**, 986022 (2022).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM