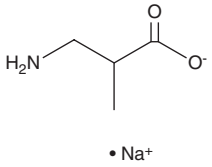
PRODUCT INFORMATION

3-Aminoisobutyric Acid (sodium salt)

Item No. 26537

CAS Registry No.: 84796-61-2
Formal Name: 3-amino-2-methyl-propanoic acid, monosodium salt
Synonyms: β-Aminoisobutyric Acid, BAIBA
MF: $C_4H_8NO_2 \bullet Na$
FW: 125.1
Purity: ≥95%
UV/Vis.: λ_{max}: 204 nm
Supplied as: A crystalline 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

3-Aminoisobutyric acid (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the 3-aminoisobutyric acid (sodium salt) in the solvent of choice, which should be purged with an inert gas. 3-Aminoisobutyric acid (sodium salt) is soluble in the organic solvent DMSO at a concentration of approximately 10 mM.

Description

3-Aminoisobutyric acid is a non-protein amino acid formed during thymine catabolism.[1] It induces browning in primary adipocytes, increasing the expression of uncoupling protein 1 (UCP-1) and CIDEA when used at a concentration of 5 µM. It also increases the expression of PPARα in primary adipocytes and in mouse inguinal white adipose tissue (WAT) *in vivo* and increases β-oxidation in hepatocytes. Plasma levels of 3-aminoisobutyric acid are increased in mice following exercise and, when administered at a dose of 100 mg/kg per day, it decreases weight gain and body fat percentage without decreasing food intake or increasing energy expenditure, and improves glucose tolerance. Levels of 3-aminoisobutyric acid are elevated in the plasma, urine, and cerebrospinal fluid of patients with β-ureidopropionase deficiency, a disorder characterized by an inborn error of pyrimidine degradation.[2]

References

1. Roberts, L.D., Boström, P., O'Sullivan, J.F., *et al.* β-Aminoisobutyric acid induces browning of white fat and hepatic β-oxidation and is inversely correlated with cardiometabolic risk factors. *Cell Metab.* **19(1)**, 96-108 (2014).
2. van Kuilenburg, A.B., Meinsma, R., Beke, E., *et al.* β-Ureidopropionase deficiency: An inborn error of pyrimidine degradation associated with neurological abnormalities. *Hum. Mol. Genet.* **13(22),** 2793-2801 (2004).

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