

Product Information

DL-2-Aminoadipic acid

Product Number **A 0637**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: C₆H₁₁NO₄
Molecular Weight: 161.2
CAS Number: 542-32-5
pK_a: 2.14, 4.21, 9.77¹
Melting Point: 165-202 °C (with decomposition)¹
Synonyms: DL-α-aminoadipic acid;
DL-α-aminohexanedioic acid; DL-AAA

2-Aminoadipic acid is an amino acid that occurs naturally in *Cholera vibrio*.² It also has been found to be a constituent of corn protein.⁴ 2-Aminoadipic acid is an intermediate in the biosynthesis of penicillin and a precursor for the biosynthesis of cephalosporin-related molecules from fungi and actinomycetes.³ The metabolism of DL-α-aminoadipic acid in rat and beef liver homogenates has been studied, with the reaction products being α-ketoadipic acid and eventually CO₂.⁵

DL-α-Aminoadipic acid has been used to block enhanced penicillin synthesis in *Penicillium chrysogenum* by diaminohexyanoic acid.⁶ The action of DL-α-aminoadipic acid on rat retina has been studied.⁷ The uptake and subsequent gliotoxicity of DL-α-aminoadipic acid in astrocytes from cultured dissociated postnatal mouse cerebellum has been investigated.⁸

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in 1 M HCl (50 mg/ml), yielding a clear to slightly hazy, colorless to light yellow solution. It is slightly soluble in water (2.2 mg/ml), ethanol, and ether.² The free acid cyclizes in boiling water to piperidonecarboxylic acid.¹

References

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4. Windsor, E., α-Aminoadipic acid as a constituent of a corn protein. J. Biol. Chem., **192**, 595-606 (1951).
5. Wilson, R. W., et al., Metabolism of α-aminoadipic and α-ketoadipic acids: studies using rat and beef liver, and human leukocytes. Clin. Chim. Acta, **69(2)**, 323-332 (1976).
6. Friedrich, C. G., and Demain, A. L., Effects of lysine analogs on *Penicillium chrysogenum*. Appl. Environ. Microbiol., **34(6)**, 706-709 (1977) and **35(3)**, 629 (1978, correction).
7. Karlsen, R. L., The toxic effect of sodium glutamate and DL-α-aminoadipic acid on rat retina: changes in high affinity uptake of putative transmitters. J. Neurochem., **31(4)**, 1055-1061 (1978).
8. Huck, S., et al., The glutamate analogue α-aminoadipic acid is taken up by astrocytes before exerting its gliotoxic effect *in vitro*. J. Neurosci., **4(10)**, 2650-2657 (1984).

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