

Ascorbic acid Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Ascorbic acid

Catalog No.: CFN90048

Cas No.: 50-81-7

Purity: >=98%

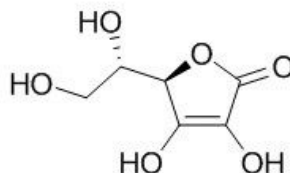
M.F: C₆H₈O₈

M.W: 176.12

Physical Description: Powder

Synonyms:3-Keto-L-gulofuranolactone;3-Oxo-L-gulofuranolactone;;Adenex;

Allercorb;Antiscorbic vitamin;Antiscorbutic vitamin.



[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Others.

[Source]

The fruits of *Ziziphus jujuba Mill.*

[Biological Activity or Inhibitors]

Ascorbic acid blunts the increased testicular lipid peroxidation and the decreased plasma testosterone level probably by protecting antioxidants and the loss of copper and zinc from testes, suggests that ascorbic acid has a protective effect on alloxan-induced damage by maintaining the activity of cellular antioxidants.^[1]

Ascorbic acid, α -tocopherol, and β -carotene, when given concurrently, have primarily antioxidant effects on lipids under stress but do not significantly affect the regulation of p53 gene expression; and erythrocyte ascorbate recycling may thus contribute more to the antioxidant reserve of blood than is evident from plasma ascorbate concentrations alone.^[2,3]

Common carp larvae have a dietary requirement for ascorbic acid, the required level for maximum tissue storage is higher than that needed for survival and maximum growth. ^[4]

In hemodialysis patients with refractory anemia and hyperferritinemia, vitamin C can improve responsiveness to erythropoietin (EPO), either by augmenting iron mobilization from its tissue stores or through antioxidant effects.^[5]

Dietary ascorbic acid protects sperm from endogenous oxidative DNA damage that could affect sperm quality and increase risk of genetic defects, particularly in populations with low ascorbic acid such as smokers.^[6]

Ascorbic acid can reverse endothelial vasomotor dysfunction in the brachial circulation of patients with coronary artery disease, suggests that increased oxidative stress contributes to endothelial dysfunction in patients with atherosclerosis and that endothelial dysfunction may respond to antioxidant therapy.^[7]

[Solvent]

Pyridine, Methanol, Ethanol, etc.

[HPLC Method]^[8]

Mobile phase: Acetonitrile- H₂O, gradient elution ;

Flow rate: 0.75 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 265 nm.

[Storage]

2-8°C, Protected from air and light, refrigerate or freeze.

[References]

- [1] El-Missiry M A. *Comp. Biochem. Phys. C* ., 1999, 124(3):233-7.
- [2] Wawrzyniak A, Górnicka M, Hamułka J, *et al. Nutr. Res.*, 2013, 33(10):868-75.
- [3] May J M, Qu Z R. *Biochemistry*, 1995, 34(39):12721-8.
- [4] Gouillou-Coustans M F, Bergot P, Kaushik S J. *Aquaculture*, 1998, 161(1-4):453-61.
- [5] Attallah N, Osman-Malik Y, Frinak S, *et al. Am. J. Kidney Dis.*, 2006, 47(4):644-54.
- [6] Fraga C G, Motchnik P A, Shigenaga M K, *et al. P. Natl. Acad.Sci.U. S.A.*1991, 88(24):11003-6.
- [7] Levine G N, Frei B, Koulouris S N, *et al. Circulation*, 1996, 93(6):1107-13.
- [8] Arayne M S, Sultana N, Bi B Z. *Pak. J. Pharm. Sci.*, 2007, 20(1):56-61.

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