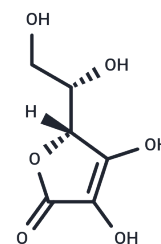


## L-Ascorbic acid

## Chemical Properties

CAS No. :	50-81-7
Formula:	C <sub>6</sub> H <sub>8</sub> O <sub>6</sub>
Molecular Weight:	176.12
Storage:	Keep away from direct sunlight Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



## Biological Description

Description	L-Ascorbic acid (Vitamin C) is a natural product that is a potent reducing agent and antioxidant. L-Ascorbic acid functions in fighting bacterial infections, in detoxifying reactions, and in the formation of collagen. L-Ascorbic acid is used in the treatment of scurvy.
Targets(IC50)	Apoptosis, Calcium Channel, Reactive Oxygen Species, Endogenous Metabolite, ROS
In vitro	<p><b>METHODS:</b> Human osteosarcoma cells MG-63 were treated with L-Ascorbic acid (62.5-1000 μM) for 3-24 h. Cell viability was measured by XTT Assay.</p> <p><b>RESULTS:</b> Cell viability was consistently &gt;95% when cells were treated with L-Ascorbic acid at concentrations of 0-250 μM. When higher concentrations were used, a dose-dependent decrease in cell viability was observed. [1]</p> <p><b>METHODS:</b> Melanoma cells WM1366 were treated with L-Ascorbic acid (5-50 μM) for 24 h. The expression levels of target proteins were measured using Western Blot.</p> <p><b>RESULTS:</b> The lowest concentration of L-Ascorbic acid (5 μM) significantly reduced the normoxic expression of HIF-1α protein in human melanoma cell lines. [2]</p>
In vivo	<p><b>METHODS:</b> L-Ascorbic acid (1-4.5 g/kg) was administered intraperitoneally to irradiated C57BL/6 mice to detect radioprotective activity.</p> <p><b>RESULTS:</b> Administration of 3 g/kg L-Ascorbic acid immediately after exposure significantly increased the survival rate of mice after 7-8 Gy WBI. However, administration of less than 3 g/kg L-Ascorbic acid was ineffective, and 4 g/kg and above was harmful to mice. [3]</p> <p><b>METHODS:</b> To investigate the effects on amnesia, L-Ascorbic acid (60-160 mg/kg) was administered intraperitoneally to diazepam, scopolamine, and aging-induced amnesic Swiss mice once daily for 3-8 days.</p> <p><b>RESULTS:</b> L-Ascorbic acid improved learning and memory in aging mice, as evidenced by decreased transfer latency and increased descending latency. [4]</p>

## Solubility Information

Solubility	H <sub>2</sub> O: 35.7 mg/mL (202.7 mM), Sonication is recommended. DMSO: 255 mg/mL (1447.88 mM), Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
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## Preparing Stock Solutions

	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	5.6779 mL	28.3897 mL	56.7795 mL
5 mM	1.1356 mL	5.6779 mL	11.3559 mL
10 mM	0.5678 mL	2.839 mL	5.6779 mL
50 mM	0.1136 mL	0.5678 mL	1.1356 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

## Reference

- Valenti MT, et al. Ascorbic acid induces either differentiation or apoptosis in MG-63 osteosarcoma lineage. *Anticancer Res.* 2014 Apr;34(4):1617-27.
- Wang S, Li F, Qiao R, et al. Arginine-Rich Manganese Silicate Nanobubbles as a Ferroptosis-Inducing Agent for Tumor-Targeted Theranostics. *ACS nano.* 2018 Dec 26;12(12):12380-12392.
- Miles SL, et al. Ascorbic acid and ascorbate-2-phosphate decrease HIF activity and malignant properties of human melanoma cells. *BMC Cancer.* 2015 Nov 7;15:867.
- Lin X, Lin T, Wang X, et al. Sesamol serves as a p53 stabilizer to relieve rheumatoid arthritis progression and inhibits the growth of synovial organoids. *Phytomedicine.* 2023: 155109.
- Jin T, Wu L, Wang J, et al. Exosomes derived from diabetic serum accelerate the progression of osteoarthritis. *Archives of Biochemistry and Biophysics.* 2024: 109960.
- Sato T, et al. Treatment of irradiated mice with high-dose ascorbic acid reduced lethality. *PLoS One.* 2015 Feb 4;10(2):e0117020.
- Liu W, Zhang K, Sun Y, et al. Multidimensional treatment of periprosthetic joint infection using fusion peptide-grafted chitosan coated porous tantalum scaffold. *Bioactive Materials.* 2025, 44: 15-33.
- Parle M, et al. Ascorbic Acid: a promising memory-enhancer in mice. *J Pharmacol Sci.* 2003 Oct;93(2):129-35.
- Kida T, et al. *Exp Eye Res.* 2010, 91(1), 85-91.
- Wang S, Li F, Qiao R, et al. Arginine-Rich Manganese Silicate Nanobubbles as a Ferroptosis-Inducing Agent for Tumor-Targeted Theranostics[J]. *ACS nano.* 2018 Dec 26;12(12):12380-12392.

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