

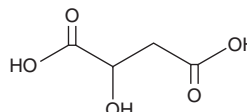
PRODUCT INFORMATION



DL-Malic Acid

Item No. 33310

CAS Registry No.: 6915-15-7
Formal Name: 2-hydroxy-butanedioic acid
Synonyms: E 296, Hydroxybutanedioic Acid, (±)-Malic Acid, NSC 25941, 2-hydroxy Succinic acid
MF: C₄H₆O₅
FW: 134.1
Purity: ≥95%
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

DL-Malic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the DL-malic acid in the solvent of choice, which should be purged with an inert gas. DL-Malic acid is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of DL-malic acid in these solvents is approximately 30 mg/ml.

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 DL-malic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DL-malic acid in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

DL-Malic acid is the racemate of the metabolic intermediate L-malic acid.¹ It reduces *CCL2* and *ICAM* expression induced by IFN- γ and TNF- α in HaCaT human keratinocytes when used at a concentration of 1 mM.² Topical administration of DL-malic acid (10 mM) inhibits epidermis and dermis thickening, as well as mast cell and eosinophil dermal infiltration in a mouse model of atopic dermatitis induced by 2,4-dinitrochlorobenzene (DNBC). Formulations containing DL-malic acid have been used as food and cosmetic preservatives and acidity regulators.

References

1. Ryan, D.G., Murphy, M.P., Frezza, C., *et al.* Coupling Krebs cycle metabolites to signalling in immunity and cancer. *Nat. Metab.* **1**, 16-33 (2019).
2. Lee, B., Heo, J., Hong, S., *et al.* DL-Malic acid as a component of α -hydroxy acids: Effect on 2,4-dinitrochlorobenzene-induced inflammation in atopic dermatitis-like skin lesions *in vitro* and *in vivo*. *Immunopharmacol. Immunotoxicol.* **41(6)**, 614-621 (2019).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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