

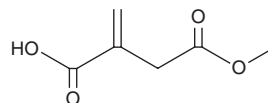
PRODUCT INFORMATION



Monomethyl Itaconate

Item No. 43263

CAS Registry No.: 7338-27-4
Formal Name: 2-methylene-butanedioic acid, 4-methyl ester
Synonyms: β -methyl Itaconate, 4-methyl Itaconate, Itaconic Acid Monomethyl ester, NSC 144957
MF: C₆H₈O₄
FW: 144.1
Purity: $\geq 95\%$
Supplied as: A solid
Storage: -20°C
Stability: ≥ 4 years
Item Origin: Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Monomethyl itaconate is supplied as a solid. A stock solution may be made by dissolving the monomethyl itaconate in the solvent of choice, which should be purged with an inert gas. Monomethyl itaconate is sparingly soluble (1-10 mg/ml) in ethanol and DMSO.

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 monomethyl itaconate can be prepared by directly dissolving the solid in aqueous buffers. Monomethyl itaconate is sparingly soluble (1-10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

Monomethyl itaconate is a copolymerization reagent and an active metabolite of the prodrug SCD-153.¹⁻³ It has also been found in *U. maydis*.⁴ Monomethyl itaconate has been used in the generation of copolymeric hydrogels for the formation of methotrexate-containing polymer disks.² Monomethyl itaconate has been used in the synthesis of thrombin inhibitors.⁵

References

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2. Teijón, C., Guerrero, S., Olmo, R., *et al.* Swelling properties of copolymeric hydrogels of poly(ethylene glycol) monomethacrylate and monoesters of itaconic acid for use in drug delivery. *J. Biomed. Mater. Res. B Appl. Biomater.* **91**(2), 716-726 (2009).
3. Tsai, J., Gori, S., Alt, J., *et al.* Topical SCD-153, a 4-methyl itaconate prodrug, for the treatment of alopecia areata. *PNAS Nexus* **2**(1), pgac297 (2022).
4. Wu, H.-C., His, H.-Y., Hsiao, G., *et al.* Chemical constituents and bioactive principles from the Mexican truffle and fermented products of the derived fungus *Ustilago maydis* MZ496986. *J. Agric. Food Chem.* **71**(2), 1122-1131 (2023).
5. Thorstensson, F., Kvarnström, I., Musil, D., *et al.* Synthesis of novel thrombin inhibitors. Use of ring-closing metathesis reactions for synthesis of P2 cyclopentene- and cyclohexenedicarboxylic acid derivatives. *J. Med. Chem.* **46**(7), 1165-1179 (2003).

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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