

Certificate of Analysis

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Product Name: MMF
CAS Number: 2756-87-8
IUPAC Name: 2(E)-Butenedioic acid 1-methyl ester

Catalog No.: 4511
Batch No.: 1
EC Number: 220-412-6

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₅H₆O₄
Batch Molecular Weight: 130.1
Physical Appearance: White solid
Solubility: DMSO to 100 mM
ethanol to 100 mM
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.3% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure
Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	46.2	4.65	
Found	46.21	4.65	

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

Product Information

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CAS Number: 2756-87-8

IUPAC Name: 2(E)-Butenedioic acid 1-methyl ester

Catalog No.: 4511

Batch No.: 1

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Description:

Nuclear factor (erythroid-derived-2)-like 2 (Nrf2) pathway activator. Also exhibits agonist activity at GPR109A. Primary metabolite of DMF (Cat. No. 4512).

Physical and Chemical Properties:

Batch Molecular Formula: C₅H₆O₄

Batch Molecular Weight: 130.1

Physical Appearance: White solid

Minimum Purity: >99%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

DMSO to 100 mM

ethanol to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Rao & Mishra (1998) Antihepatotoxic activity of monomethyl fumarate isolated from *Fumaria indica*. J.Ethnopharmacol. **60** 207. PMID: 9613834.

Tang et al (2008) The psoriasis drug monomethylfumarate is a potent nicotinic receptor agonist. Biochem.Biophys.Res.Commun. **375** 562. PMID: 18722346.

Hanson et al (2010) Nicotinic acid- and monomethyl fumarate-induced flushing involves GPR109A expressed by keratinocytes and COX-2-dependent prostanoid formation in mice. J.Clin.Invest. **120** 2910. PMID: 20664170.

Scannevin et al (2012) Fumarates promote cytoprotection of central nervous system cells against oxidative stress via the nuclear factor (erythroid-derived 2)-like 2 pathway. J.Pharmacol.Exp.Ther. **341** 274. PMID: 22267202.

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