

Certificate of Analysis

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Product Name: DMF
CAS Number: 624-49-7
IUPAC Name: 2(*E*)-Butenedioic acid 1,4-dimethyl ester

Catalog No.: 4512
Batch No.: 1
EC Number: 210-849-0

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₆H₈O₄
Batch Molecular Weight: 144.13
Physical Appearance: White solid
Solubility: DMSO to 100 mM
 ethanol to 50 mM
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

GC: Shows 99.7% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	50	5.59	
Found	50.1	5.6	

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

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Description:

Nuclear factor (erythroid-derived)-like 2 (Nrf2) pathway activator; induces upregulation of antioxidant gene expression. Displays cytoprotective effects in human spinal cord astrocytes, oligodendrocyte precursor cells and hippocampal neurons following hydrogen peroxide challenge. Exerts neuroprotective effects in vivo in experimental autoimmune encephalomyelitis. Primary metabolite (MMF, Cat. No. 4511) available.

Physical and Chemical Properties:

Batch Molecular Formula: C₆H₈O₄

Batch Molecular Weight: 144.13

Physical Appearance: White solid

Minimum Purity: >99%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

DMSO to 100 mM

ethanol to 50 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:

Linker et al (2011) Fumaric acid esters exert neuroprotective effects in neuroinflammation via activation of the Nrf2 antioxidant pathway. *Brain* **134** 678. PMID: 21354971.

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

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