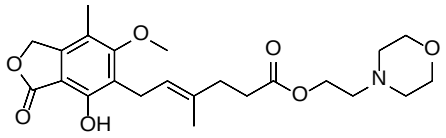
Product data sheet

MedKoo Cat#: 318293 Name: Mycophenolic acid CAS: 24280-93-1 Chemical Formula: $C_{23}H_{31}NO_7$ Exact Mass: 433.2101 Molecular Weight: 433.4947	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Mycophenolic acid is an immunosuppressant drug used to prevent rejection in organ transplantation. It inhibits an enzyme needed for the growth of T cells and B cells. It was initially marketed as the prodrug mycophenolate mofetil (MMF) to improve oral bioavailability.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	5.0	15.61
DMSO	51.51	118.82
Ethanol	5.0	15.61
PBS (pH 7.2)	10.0	31.22

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.12 mL	15.61 mL	31.22 mL
5 mM	0.62 mL	3.12 mL	6.24 mL
10 mM	0.31 mL	1.56 mL	3.12 mL
50 mM	0.06 mL	0.31 mL	0.62 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Senda M, DeLustro B, Eugui E, Natsumeda Y. Mycophenolic acid, an inhibitor of IMP dehydrogenase that is also an immunosuppressive agent, suppresses the cytokine-induced nitric oxide production in mouse and rat vascular endothelial cells. Transplantation. 1995 Nov 27;60(10):1143-8. doi: 10.1097/00007890-199511270-00015. PMID: 7482723.
2. Eugui EM, Almquist SJ, Muller CD, Allison AC. Lymphocyte-selective cytostatic and immunosuppressive effects of mycophenolic acid in vitro: role of deoxyguanosine nucleotide depletion. Scand J Immunol. 1991 Feb;33(2):161-73. doi: 10.1111/j.1365-3083.1991.tb03746.x. PMID: 1826793.

In vivo study

1. Deng Y, Zhang Z, Yang H, Wang J, Feng L, Su Y, Xu D. Mycophenolic Acid Induces the Intestinal Epithelial Barrier Damage through Mitochondrial ROS. Oxid Med Cell Longev. 2022 Jul 5;2022:4195699. doi: 10.1155/2022/4195699. PMID: 35847589; PMCID: PMC9277164.

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2. Domhan S, Muschal S, Schwager C, Morath C, Wirkner U, Ansorge W, Maercker C, Zeier M, Huber PE, Abdollahi A. Molecular mechanisms of the antiangiogenic and antitumor effects of mycophenolic acid. Mol Cancer Ther. 2008 Jun;7(6):1656-68. doi: 10.1158/1535-7163.MCT-08-0193. PMID: 18566237.

7. Bioactivity

Biological target:

Mycophenolic acid is a potent uncompetitive inosine monophosphate dehydrogenase (IMPDH) inhibitor with an EC_{50} of 0.24 μM.

In vitro activity

MPA (mycophenolic acid) suppresses mixed lymphocyte reactions when added 3 days after their initiation. These findings suggest that MPA does not inhibit early responses of T and B lymphocytes to mitogenic or antigenic stimulation but blocks the cells at the time of DNA synthesis. The cytostatic effect of MPA is more potent on lymphocytes than on other cell types, such as fibroblasts and endothelial cells. MPA also inhibits antibody formation by polyclonally activated human B lymphocytes. MPA is an immunosuppressive agent reversibly inhibiting proliferation of T and B lymphocytes and antibody formation, with a profile of activity different from that of other immunosuppressive drugs.

Reference: Scand J Immunol. 1991 Feb;33(2):161-73. https://pubmed.ncbi.nlm.nih.gov/1826793/

In vivo activity

U87 tumor growth was markedly inhibited in vivo in BALB/c nude mice, suggesting that MPA (mycophenolic acid) exerted its antitumor effects via modulation of the tumor microenvironment. Accordingly, microvascular density and pericyte coverage were markedly reduced in MPA-treated tumors in vivo.

Reference: Mol Cancer Ther. 2008 Jun;7(6):1656-68. https://pubmed.ncbi.nlm.nih.gov/18566237/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.