

# PRODUCT INFORMATION



## Mitomycin C

Item No. 11435

**CAS Registry No.:** 50-07-7  
**Formal Name:** 6-amino-8-[[[(aminocarbonyl)oxy]methyl]-1,1aS,2,8S,8aR,8bS-hexahydro-8a-methoxy-5-methyl-azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione

**Synonyms:** Ametycine, MitoExtra, Mitonco, Mitoplus, MMC, NSC 26980

**MF:** C<sub>15</sub>H<sub>18</sub>N<sub>4</sub>O<sub>5</sub>

**FW:** 334.3

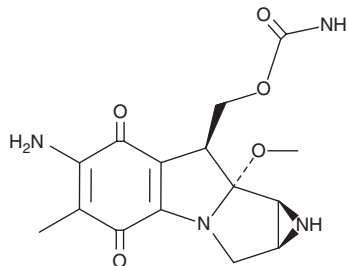
**Purity:** ≥98%

**UV/Vis.:** λ<sub>max</sub>: 216, 359 nm

**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

Mitomycin C (MMC) is supplied as a crystalline solid. A stock solution may be made by dissolving the MMC in the solvent of choice, which should be purged with an inert gas. MMC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of MMC in ethanol is approximately 0.1 mg/ml and approximately 20 mg/ml in DMSO and DMF.

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 MMC can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of MMC in PBS (pH 7.2) is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

MMC is an antitumor antibiotic that was discovered as a fermentation product of *S. caespitosus*.<sup>1</sup> As an alkylating agent, its activity depends on reductive activation either through low pH or DT-diaphorase or NADH cytochrome c reductase.<sup>2</sup> Activated MMC crosslinks double stranded DNA and is widely used as a tool to selectively inhibit DNA synthesis and mutagenesis, to stimulate genetic recombination, chromosome breakage and sister chromatid exchange, and to induce DNA repair.<sup>3,4</sup> MMC has clinical significance in combination cancer chemotherapy of solid tumors as well as for modulating wound healing after ophthalmological surgeries and in the management of various corneal disorders.<sup>5,6</sup>

### References

1. Philips, F.S., Schwartz, H.S., and Sternberg, S.S. *Cancer Res.* **20**, 1354-1361 (1960).
2. Mao, Y., Varoglu, M., and Sherman, D.H. *Chem. Biol.* **6**(4), 251-263 (1999).
3. Tomasz, M. *Chem. Biol.* **2**(9), 575-579 (1995).
4. Iyer, V.N. and Szybalski, W. *Proc. Natl. Acad. Sci. U.S.A.* **50**, 355-362 (1963).
5. Kato, Y., Onishi, H., and Machida, Y. *In Vivo* **19**(1), 301-310 (2005).
6. Shao, T., Li, X., and Ge, J. *Diagn. Pathol.* **6**(64), 1-5 (2011).

#### 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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