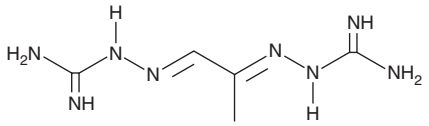
# PRODUCT INFORMATION

## Mitoguazone

*Item No. 33803*

**CAS Registry No.:** 459-86-9
**Formal Name:** 2,2′-(1-methyl-1,2-ethanediylidene)*bis*-hydrazinecarboximidamide
**Synonyms:** MGBG, NSC 32946
**MF:** $C_5H_{12}N_8$
**FW:** 184.2
**Supplied as:** A 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

Mitoguazone is supplied as a solid. A stock solution may be made by dissolving the mitoguazone in the solvent of choice, which should be purged with an inert gas. Mitoguazone is slightly soluble (0.1-1 mg/ml) in acetonitrile.

Mitoguazone is sparingly soluble (1-10 mg/ml) in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

Mitoguazone is an inhibitor of S-adenosylmethionine decarboxylase (SAMDC) and diamine oxidase (DAO; $IC_{50}$s = 1 and 0.33 µM for the rat and porcine enzymes, respectively).[1] It inhibits viral DNA integration and replication in HIV-1-infected primary human macrophages when used at a concentration of 0.14 µM.[2] Mitoguazone (10 µM) decreases viability and induces mitochondrial swelling and cristae degradation in L1210 murine skin lymphocytic leukemia cells.[3] It reduces the proliferation of seven melanoma cancer cell lines ($IC_{50}$s = 0.09-6.6 µM). *In vivo*, mitoguazone (50 mg/kg per day), in combination with α-difluoromethylornithine (DFMO; Item No. 16889), decreases tumor weight in a patient-derived xenograft (PDX) mouse model of differentiated papillary adenocarcinoma.[4]

### References


1. Regenass, U., Mett, H., Stanek, J., *et al.* CGP 48664, a new S-adenosylmethionine decarboxylase inhibitor with broad spectrum antiproliferative and antitumor activity. *Cancer Res.* **54(12)**, 3210-3217 (1994).
2. Jin, X., McGrath, M.S., and Xu, H. Inhibition of HIV expression and integration in macrophages by methylglyoxal-bis-guanylhydrazone. *J. Virol.* **89(22)**, 11179-11186 (2015).
3. Mikles-Robertson, F., Dave, C., and Porter, C.W. Apparent autophagocytosis of mitochondria in L1210 leukemia cells treated *in vitro* with 4,4'-diacetyl-diphenylurea-bis(guanylhydrazone). *Cancer Res.* **40(4)**, 1054-1061 (1980).
4. Fujimoto, S., Igarashi, K., Shrestha, R.D., *et al.* Antitumor effects of two polyamine antimetabolites combined with mitomycin C on human stomach cancer cells xenotransplanted into nude mice. *Int. J. Cancer* **35(6)**, 821-825 (1985).





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