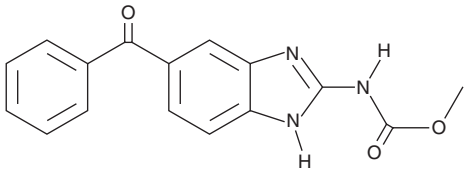
PRODUCT INFORMATION

Mebendazole

Item No. 18872

CAS Registry No.:	31431-39-7
Formal Name:	N-(6-benzoyl-1H-benzimidazol-2-yl)-carbamic acid, methyl ester
Synonyms:	NSC 184849, R 17635
MF:	$C_{16}H_{13}N_3O_3$
FW:	295.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 209, 246, 310 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

Mebendazole is supplied as a crystalline solid. A stock solution may be made by dissolving the mebendazole in the solvent of choice. Mebendazole is soluble in the organic solvent DMSO, which should be purged with an inert gas, up to a concentration of approximately 10 mM.

Description

Mebendazole is an inhibitor of microtubule polymerization and an anthelmintic.[1] It reduces microtubule polymerization in a cell-free assay when used at a concentration of 10 µM. Mebendazole reduces container attachment, a measure of viability, by *G. duodenalis* with a half-maximal inhibition of binding (IB_{50}) value of 190 nM.[2] It reduces the proliferation of SK-MEL-19 and M14 melanoma cell lines (IC_{50}s = 300 and 320 µM, respectively) and induces apoptosis and poly(ADP-ribose) polymerase (PARP) cleavage in SK-MEL-19 and M14 cells, but not melanocytes, when used at a concentration of 1 µM.[3] It decreases oxidative stress-induced cell death in primary mouse cortical neurons in a concentration-dependent manner.[1] *In vivo*, mebendazole (800 µg/animal every other day) decreases tumor volume, weight, hemoglobin levels, and vascularization in an H460 lung cancer mouse xenograft model.[4] Mebendazole (8.8 mg/kg) eradicates *S. vulgaris*, *S. edentates*, and *S. equinus* worm burden in infected ponies.[5] Formulations containing mebendazole have been used in the treatment of helminth gastrointestinal infections.

References

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2. Morgan, U.M., Reynoldson, J.A., and Thompson, R.C.A. Activities of several benzimidazoles and tubulin inhibitors against *Giardia* spp. in vitro. *Antimicrob. Agents Chemother.* **37(2)**, 328-331 (1993).
3. Doudican, N., Rodriguez, A., Osman, I., *et al.* Mebendazole induces apoptosis via Bcl-2 inactivation in chemoresistant melanoma cells. *Mol. Cancer Res.* **6(8)**, 1308-1315 (2008).
4. Mukhopadhyay, T., Sasaki, J.i., Ramesh, R., *et al.* Mebendazole elicits a potent antitumor effect on human cancer cell lines both *in vitro* and *in vivo*. *Clin. Cancer Res.* **8(9)**, 2963-2969 (2002).
5. Colglazier, M.L., Enzie, F.D., and Kates, K.C. Critical anthelmintic trials in ponies with four benzimidazoles: Mebendazole, cambendazole, fenbendazole, and albendazole. *J. Parasitol.* **63(4)**, 724-727 (1977).

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