

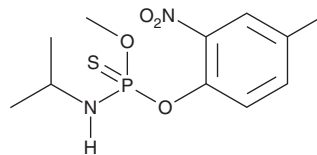
PRODUCT INFORMATION



Amiprofos-methyl

Item No. 23379

CAS Registry No.: 36001-88-4
Formal Name: N-(1-methylethyl)-phosphoramidothioic acid, O-methyl O-(4-methyl-2-nitrophenyl) ester
Synonyms: APM, NSC 313446
MF: C₁₁H₁₇N₂O₄PS
FW: 304.3
Purity: ≥98%
UV/Vis.: λ_{max}: 206, 245, 254 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

Amiprofos-methyl (APM) is supplied as a crystalline solid. A stock solution may be made by dissolving the APM in the solvent of choice, which should be purged with an inert gas. APM is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of APM in ethanol is approximately 10 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 APM can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of APM in PBS, pH 7.2, is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

APM is a phosphoric amide herbicide.¹ It reversibly decreases *H. vulgare* root and shoot length and inhibits *in vitro* polymerization of *Rosa* tubulin induced by paclitaxel (Item No. 10461) in a dose-dependent manner.^{1,2} APM completely inhibits tubulin polymerization in *Hemanthus* endosperm cells at a concentration of 0.1 μM.¹ The antitubulin effects of APM are specific to plants as it has no effect on bovine brain tubulin polymerization at concentrations up to 100 μM. APM inhibits calcium accumulation in corn mitochondria (ID₅₀ = 140 nM) and induces a 3-fold increase in the rate of calcium efflux from rat liver mitochondria at a concentration of 100 nM.³ APM inhibits the growth of *P. falciparum* (IC₅₀ = 3.5 μM) and completely inhibits microtubule polymerization in *P. falciparum* trophozoites at a concentration of 20 μM.⁴

References

1. Morejohn, L.C. and Fosket, D.E. Inhibition of plant microtubule polymerization in vitro by the phosphoric amide herbicide amiprofos-methyl. *Science* **224**(4651), 874-876 (1984).
2. Temel, A. and Gozukirmizi, N. Cytotoxic effects of metaphase-arresting methods in barley. *Tsitol. Genet.* **49**(6), 43-49 (2015).
3. Hertel, C., Quader, H., Robinson, D.G., et al. Herbicides and fungicides stimulate Ca²⁺ efflux from rat liver mitochondria. *FEBS Lett.* **127**(1), 37-39 (1981).
4. Fennell, B.J., Naughton, J.A., Dempsey, E., et al. Cellular and molecular actions of dinitroaniline and phosphorothioamidate herbicides on *Plasmodium falciparum*: Tubulin as a specific antimalarial target. *Mol. Biochem. Parasitol.* **145**(2), 226-238 (2006).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/19/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM