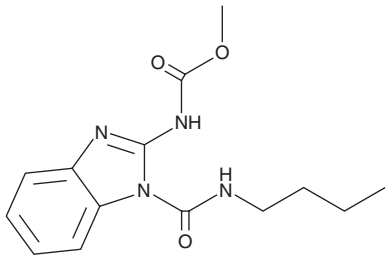
PRODUCT INFORMATION

Benomyl

Item No. 34634

CAS Registry No.:	17804-35-2
Formal Name:	N-[1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-carbamic acid, methyl ester
Synonym:	NSC 263489
MF:	$C_{14}H_{18}N_4O_3$
FW:	290.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 221, 286, 293 nm
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

Benomyl is supplied as a solid. A stock solution may be made by dissolving the benomyl in the solvent of choice, which should be purged with an inert gas. Benomyl is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of benomyl in these solvents is approximately 5 and 30 mg/ml, respectively. Benomyl is also slightly soluble in ethanol.

Benomyl is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, benomyl should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Benomyl has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Benomyl is a carbamate pesticide.[1] It inhibits mycelial growth of the plant pathogenic fungus *A. rabiei* on potato dextrose agar (EC_{50} = 2.19 µg/ml). Benomyl (1 mg/ml in the drinking water) decreases the fecundity of red ant (*M. rubra*) queens.[2] It induces the production of reactive oxygen species (ROS), apoptosis, and DNA damage in H9c2 rat cardiomyocytes.[3]

References

1. Demirci, F., Bayraktar, H., Babalioğullu, I., *et al. In vitro* and *in vivo* effects of some fungicides against the chickpea blight pathogen, *Ascochyta rabiei*. *J. Phytopathology* **151(9)**, 519-524 (2003).
2. Pech, P. and Heneberg, P. Benomyl treatment decreases fecundity of ant queens. *J. Invertebr. Pathol.* **130**, 61-63 (2015).
3. Mehtap, K., Ezgi, Ö., Tugce, B., *et al.* Benomyl induced oxidative stress related DNA damage and apoptosis in H9c2 cardiomyoblast cells. *Toxicol. In Vitro* **75**, 105180 (2021).

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