# Maleic hydrazide

**Cat. No.:** HY-59354

**CAS No.:** 123-33-1

**Molecular Formula:** $C_4H_4N_2O_2$

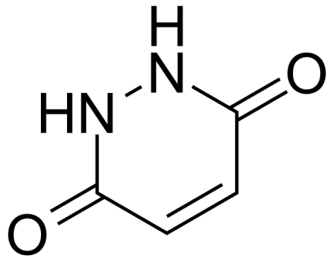
**Molecular Weight:** 112.09

**Target:** DNA/RNA Synthesis

**Pathway:** Cell Cycle/DNA Damage

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 125 mg/mL (1115.18 mM; Need ultrasonic)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 8.9214 mL | 44.6070 mL | 89.2140 mL |
| 5 mM | 1.7843 mL | 8.9214 mL | 17.8428 mL |
| 10 mM | 0.8921 mL | 4.4607 mL | 8.9214 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (18.56 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (18.56 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (18.56 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Maleic hydrazide is extensively used as a systemic plant growth regulator and as a herbicide. Maleic hydrazide acts as an inhibitor of the synthesis of nucleic acids and proteins[1][2].

**In Vitro**

Maleic hydrazide is used in agriculture-in despite its known effect as a mutagenic and clastogenic agent. Maleic hydrazide had lower $IC_{50}$ values for all cell lines compared to Ethephon. Maleic hydrazide also showed least cytotoxicity on Vero cells, followed by Hep2 and HepG2 cells[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| **In Vivo** | Maleic hydrazide has a low acute toxicity by oral, dermal, and inhalation routes of exposure[3].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## REFERENCES


[1]. Venezian A, et al. The Influence of the Plant Growth Regulator Maleic Hydrazide on Egyptian Broomrape Early Developmental Stages and Its Control Efficacy in Tomato under Greenhouse and Field Conditions. Front Plant Sci. 2017;8:691. Published 2017 May 16.

[2]. Swietlińska Z, et al. Cytotoxic effects of maleic hydrazide. Mutat Res. 1978;55(1):15-30.

[3]. Yurdakok B, et al. Cytotoxic effects of etephon and maleic hydrazide in Vero, Hep2, HepG2 cells. Drug Chem Toxicol. 2014;37(4):459-465.





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