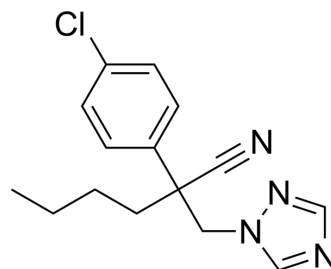


## Myclobutanil

|                           |  |       |         |
|---------------------------|--|-------|---------|
| <b>Cat. No.:</b>          | HY-B2148   |       |         |
| <b>CAS No.:</b>           | 88671-89-0                                       |       |         |
| <b>Molecular Formula:</b> | C <sub>15</sub> H <sub>17</sub> ClN <sub>4</sub> |       |         |
| <b>Molecular Weight:</b>  | 288.78   |       |         |
| <b>Target:</b>            | Fungal   |       |         |
| <b>Pathway:</b>           | Anti-infection                                   |       |         |
| <b>Storage:</b>           | Powder   | -20°C | 3 years |
|                           |  | 4°C   | 2 years |
|                           | In solvent                                       | -80°C | 2 years |
|                           |  | -20°C | 1 year  |



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 100 mg/mL (346.28 mM)  
 \* "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Solvent       |      | 1 mg      | 5 mg       | 10 mg      |
|---------------------------|---------------|------|-----------|------------|------------|
|                           | Concentration | Mass |           |            |            |
|                           | 1 mM          |      | 3.4628 mL | 17.3142 mL | 34.6284 mL |
|                           | 5 mM          |      | 0.6926 mL | 3.4628 mL  | 6.9257 mL  |
|                           | 10 mM         |      | 0.3463 mL | 1.7314 mL  | 3.4628 mL  |

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

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (8.66 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (8.66 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (8.66 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Myclobutanil is a conazole class fungicide widely used as an agrichemical.

#### In Vitro

Myclobutanil reduces cell viability to <50% at 100 ppm and to <10% at 500 ppm. Myclobutanil promotes a slight, but significant, increase in fatty acid (FA)-induced steatosis at doses from 1 to 100 ppm. Anti-apoptotic biomarkers are significantly reduced by Myclobutanil<sup>[1]</sup>.

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

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## PROTOCOL

### Kinase Assay <sup>[1]</sup>

To further evaluate apoptosis, cell extracts are collected after 24 h of exposure to Myclobutanil, centrifuged, and analyzed with a multiplex biometric ELISA-based immunoassay containing dyed microspheres conjugated to a monoclonal antibody specific for the target protein. Apoptosis biomarkers are BCL-xL/Bak dimer and Mcl-1/Bak dimer, quantified using RBM Apoptosis Panel 3. Each experiment is performed in triplicate and apoptosis biomarker levels determined using the Bio-Plex Array Reader. The analytic concentrations are calculated using a standard curve, according to the manufacturer's instructions<sup>[1]</sup>.

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### Cell Assay <sup>[1]</sup>

The hepatoma cell line HepG2 is used in this study. The cells are grown on tissue culture plates in an incubator with a humidified atmosphere (95% air/5% CO<sub>2</sub> v/v) at 37°C. Steatosis is induced by incubating the hepatocytes with 6 mM of a 1:1 v/v mixture of oleic (18:1) and linoleic (18:2) fatty acids (Fas) for 24 h. After a wash with PBS, cells are exposed for an additional 24 h to Myclobutanil at 0.1, 1, 10, 100 or 500 ppm. Cytotoxicity is assessed in HepG2 cells (1.0×10<sup>5</sup> cells/well in 24-well plates) by measuring the reduction of the tetrazolium dye 3-(4, 5-dimethylthiazol-2-yl)-5-(3carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium (MTT)<sup>[1]</sup>.

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

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## REFERENCES

[1]. Stellavato A, et al. Myclobutanil worsens nonalcoholic fatty liver disease: An in vitro study of toxicity and apoptosis on HepG2 cells. *Toxicol Lett.* 2016 Nov 16;262:100-104.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA