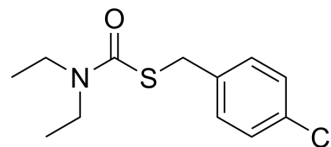


## Thiobencarb

|                    |  |
|--------------------|--|
| Cat. No.:          | HY-129792  |
| CAS No.:           | 28249-77-6   |
| Molecular Formula: | C <sub>12</sub> H <sub>16</sub> ClNOS  |
| Molecular Weight:  | 257.78   |
| Target:            | Others   |
| Pathway:           | Others   |
| Storage:           | -20°C, protect from light<br>* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light) |



### SOLVENT & SOLUBILITY

|   |  |                       |      |       |           |            |            |
|---|--|-----------------------|------|-------|-----------|------------|------------|
| In Vitro  | DMSO : 100 mg/mL (387.93 mM; Need ultrasonic)  |                       |      |       |           |            |            |
|   | Preparing Stock Solutions  | Solvent Concentration | Mass | 1 mg  | 5 mg      | 10 mg      |            |
|   |  |                       |      | 1 mM  | 3.8793 mL | 19.3964 mL | 38.7928 mL |
|   |  |                       |      | 5 mM  | 0.7759 mL | 3.8793 mL  | 7.7586 mL  |
|   |  |                       |      | 10 mM | 0.3879 mL | 1.9396 mL  | 3.8793 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<br>Solubility: ≥ 2.5 mg/mL (9.70 mM); Clear solution |                       |      |       |           |            |            |
|   | 2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)<br>Solubility: ≥ 2.5 mg/mL (9.70 mM); Clear solution            |                       |      |       |           |            |            |
|   | 3. Add each solvent one by one: 10% DMSO >> 90% corn oil<br>Solubility: ≥ 2.5 mg/mL (9.70 mM); Clear solution                            |                       |      |       |           |            |            |

### BIOLOGICAL ACTIVITY

|             |   |
|-------------|---|
| Description | Thiobencarb is an herbicide, can reduce growth, photosynthetic activity, and amount of rieske iron-sulfur protein in the diatom <i>Thalassiosira pseudonana</i> <sup>[1]</sup> .  |
| In Vitro    | Thiobencarb (0.078-5 mg/L, 72 h) concentrations producing 10%, 20%, and 50% growth inhibition are calculated to be 0.55, 0.79, and 1.26 mg/L, respectively <sup>[1]</sup> .<br>Thiobencarb (5, 2.5 mg/L, 6 h) is drastically decreased in the Fv/Fm ratio, after exposure of cells for up to 6 h under light and in darkness and three representative inhibitors of the photosynthetic electron transport chain <sup>[1]</sup> .<br>Thiobencarb (5 mg/L, 24 h) increase expression levels of 13 proteins significantly and those of 11 proteins decreased significantly in <i>Thalassiosira pseudonana</i> . Among these proteins, the level of the Rieske iron-sulfur protein was decreased to |

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less than half of the control level<sup>[1]</sup>.

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

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## REFERENCES

[1]. Shimasaki Y, et al. Thiobencarb herbicide reduces growth, photosynthetic activity, and amount of Rieske iron-sulfur protein in the diatom *Thalassiosira pseudonana*. *J Biochem Mol Toxicol*. 2013 Sep;27(9):437-44.

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

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