

# Product data sheet



MedKoo Cat#: 525615 Name: Methiocarb CAS: 2032-65-7 Chemical Formula: C <sub>11</sub> H <sub>15</sub> NO <sub>2</sub> S Exact Mass: 225.0823 Molecular Weight: 225.306	
Product supplied as: Powder	
Purity (by HPLC): ≥ 98%	
Shipping conditions: Ambient temperature	
Storage conditions: Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

## 1. Product description:

Methiocarb is a carbamate pesticide which is used as a bird repellent, insecticide, acaricide and molluscicide. Methiocarb inhibits reversibly acetylcholinesterase activity resulting in a cholinergic stimulation making methiocarb a potent neurotoxin.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	20.0	88.77
DMSO	20.0	88.77
DMSO:PBS (pH 7.2) (1:1)	0.5	2.22
Ethanol	10.0	44.38

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.44 mL	22.19 mL	44.38 mL
5 mM	0.89 mL	4.44 mL	8.88 mL
10 mM	0.44 mL	2.22 mL	4.44 mL
50 mM	0.09 mL	0.44 mL	0.89 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

1. Casale GP, Vennerstrom JL, Bavari S, Wang TL. Inhibition of interleukin 2 driven proliferation of mouse CTLL2 cells, by selected carbamate and organophosphate insecticides and congeners of carbaryl. Immunopharmacol Immunotoxicol. 1993 Mar-Jun;15(2-3):199-215. doi: 10.3109/08923979309025994. PMID: 8349949.

### In vivo study

1. Ozden S, Catalgol B, Gezginci-Oktayoglu S, Karatug A, Bolkent S, Alpertunga B. Acute effects of methiocarb on oxidative damage and the protective effects of vitamin E and taurine in the liver and kidney of Wistar rats. Toxicol Ind Health. 2013 Feb;29(1):60-71. doi: 10.1177/0748233712446719. Epub 2012 May 23. PMID: 22623520.

2. Han J, Park M, Kim JH, Kim A, Won M, Lee DR, Ko JJ, Yoon H, Sim SH, Lee K, Bae J. Increased expression of the testicular estrogen receptor alpha in adult mice exposed to low doses of methiocarb. J Appl Toxicol. 2009 Jul;29(5):446-51. doi: 10.1002/jat.1417. PMID: 19206145.

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## 7. Bioactivity

### Biological target:

Methiocarb is a carbamate pesticide.

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### In vitro activity

This study examined the potential of 8 antiCHE insecticides (4 carbamates and 4 organophosphates) to inhibit IL2-dependent proliferation of mouse CTLL2 cells. The order of potency for T cell inhibition was carbaryl = dichlorvos > methiocarb > carbofuran > paraoxon > mevinphos > aldicarb = monocrotophos. In view of the relatively high inhibitory potency of carbaryl (a carbamate with low cholinergic toxicity), 3 metabolites and 5 congeners of carbaryl were tested for potency to inhibit CTLL2 proliferation.

Reference: Immunopharmacol Immunotoxicol. 1993 Mar-Jun;15(2-3):199-215. <https://pubmed.ncbi.nlm.nih.gov/8349949/>

### In vivo activity

Therefore, the present study was aimed to evaluate the effect of acute MC exposure on lipid peroxidation, antioxidant defense systems, histological changes in Wistar rats and the protective effect of pretreatment with vitamin E and taurine. The rats administered with MC showed significant increase in the levels of malondialdehyde in the liver and kidney as an index of lipid peroxidation. Levels of glutathione and activities of superoxide dismutase, catalase and glutathione peroxidase were significantly increased, while activity of glutathione reductase remained unchanged in both the tissues after MC treatment.

Reference: Toxicol Ind Health. 2013 Feb;29(1):60-71. <https://pubmed.ncbi.nlm.nih.gov/22623520/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*