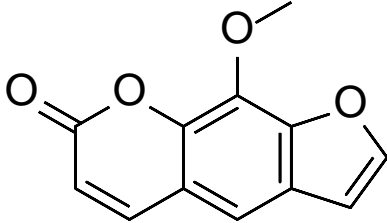


# Product data sheet



|   |   |   |
|---|---|---|
| MedKoo Cat#: 100620<br>Name: Methoxsalen<br>CAS: 298-81-7<br>Chemical Formula: C <sub>12</sub> H <sub>8</sub> O <sub>4</sub><br>Exact Mass: 216.0423<br>Molecular Weight: 216.192 |  |   |
| Product supplied as:  |   | Powder  |
| Purity (by HPLC):   |   | ≥ 98%   |
| Shipping conditions   |   | Ambient temperature   |
| Storage conditions:   |   | Powder: -20°C 3 years; 4°C 2 years.<br>In solvent: -80°C 3 months; -20°C 2 weeks. |

## 1. Product description:

Methoxsalen is a naturally occurring substance isolated from the seeds of the plant Ammi majus with photoactivating properties. As a member of the family of compounds known as psoralens or furocoumarins, methoxsalen's exact mechanism of action is unknown; upon photoactivation, methoxsalen has been observed to bind covalently to and crosslink DNA. Check for active clinical trials or closed clinical trials using this agent. (NCI Thesaurus).

## 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 |
|---------|-----------------|--------------|
| DMSO    | 46.5            | 215.09       |
| Ethanol | 5.0             | 23.13        |

## 4. Stock solution preparation table:

| Concentration / Solvent Volume / Mass | 1 mg    | 5 mg     | 10 mg    |
|---------------------------------------|---------|----------|----------|
| 1 mM                                  | 4.63 mL | 23.13 mL | 46.26 mL |
| 5 mM                                  | 0.93 mL | 4.63 mL  | 9.25 mL  |
| 10 mM                                 | 0.46 mL | 2.31 mL  | 4.63 mL  |
| 50 mM                                 | 0.09 mL | 0.46 mL  | 0.93 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. Zhang W, Kilicarslan T, Tyndale RF, Sellers EM. Evaluation of methoxsalen, tranlycypromine, and tryptamine as specific and selective CYP2A6 inhibitors in vitro. *Drug Metab Dispos.* 2001 Jun;29(6):897-902. PMID: 11353760.

2. Mäenpää J, Juvonen R, Raunio H, Rautio A, Pelkonen O. Metabolic interactions of methoxsalen and coumarin in humans and mice. *Biochem Pharmacol.* 1994 Oct 7;48(7):1363-9. doi: 10.1016/0006-2952(94)90558-4. PMID: 7945434.

### In vivo study

1. Farhadi M, Fattahi E, Mohseni Kouchesfahani H, Shockravi A, Parivar K. The adverse effects of methoxsalen on the oogenesis of BALB/c mice. *Cell J.* 2014 Winter;15(4):348-55. Epub 2013 Nov 20. PMID: 24381860; PMCID: PMC3866539.

2. Bagdas D, Muldoon PP, Zhu AZ, Tyndale RF, Damaj MI. Effects of methoxsalen, a CYP2A5/6 inhibitor, on nicotine dependence behaviors in mice. *Neuropharmacology.* 2014 Oct;85:67-72. doi: 10.1016/j.neuropharm.2014.05.006. Epub 2014 May 21. PMID: 24859605; PMCID: PMC4106981.

# Product data sheet



## 7. Bioactivity

### Biological target:

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Methoxsalen (8-Methoxypsoralen) is a potent tricyclic furocoumarin suicide inhibitor of CYP (cytochrome P-450).

### In vitro activity

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Methoxsalen inhibited CYP2A6 ( $K(i) = 0.8 \text{ microM}$ ) with about 3.5- 94-fold greater potency than other P450s, except for CYP1A2 ( $K(i) = 0.2 \text{ microM}$ ).

Reference: Drug Metab Dispos. 2001 Jun;29(6):897-902. <https://pubmed.ncbi.nlm.nih.gov/11353760/>

### In vivo activity

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This study aimed to demonstrate the effect of methoxsalen, UVA and their combination on oogenesis Balb/C mice. Both macro and microscopic studies showed significant anomalies ( $p < 0.05$ ) among experimental group ovaries as compared to control group. Methoxsalen also reduced circulating estrogen levels in blood serum, significantly.

Reference: Cell J. 2014 Winter;15(4):348-55. <https://pubmed.ncbi.nlm.nih.gov/24381860/>

*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.*