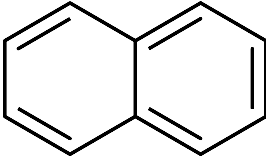


# Product data sheet



MedKoo Cat#: 591613 Name: Naphthalene CAS: 91-20-3 Chemical Formula: C <sub>10</sub> H <sub>8</sub> Exact Mass: 128.0626 Molecular Weight: 128.174		
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:

Naphthalene is an organic compound with formula C<sub>10</sub>H<sub>8</sub>. It is the simplest polycyclic aromatic hydrocarbon, and is a white crystalline solid with a characteristic odor that is detectable at concentrations as low as 0.08 ppm by mass.

## 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
TBD	TBD	TBD

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	7.80 mL	39.01 mL	78.02 mL
5 mM	1.56 mL	7.80 mL	15.60 mL
10 mM	0.78 mL	3.90 mL	7.80 mL
50 mM	0.16 mL	0.78 mL	1.56 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

- Osmaniye D, Sağlık BN, Khalilova N, Levent S, Bayazit G, Gül ÜD, Özkay Y, Kaplancıklı ZA. Design, Synthesis, and Biological Evaluation Studies of Novel Naphthalene-Chalcone Hybrids As Antimicrobial, Anticandidal, Anticancer, and VEGFR-2 Inhibitors. ACS Omega. 2023 Feb 13;8(7):6669-6678. doi: 10.1021/acsomega.2c07256. PMID: 36844559; PMCID: PMC9947975.
- El-Sheref EM, Ameen MA, El-Shaieb KM, Abdel-Latif FF, Abdel-Naser AI, Brown AB, Bräse S, Fathy HM, Ahmad I, Patel H, Gomaa HAM, Youssif BGM, Mohamed AH. Design, Synthesis and Biological Evaluation of Syn and Anti-like Double Warhead Quinolinones Bearing Dihydroxy Naphthalene Moiety as Epidermal Growth Factor Receptor Inhibitors with Potential Apoptotic Antiproliferative Action. Molecules. 2022 Dec 10;27(24):8765. doi: 10.3390/molecules27248765. PMID: 36557897; PMCID: PMC9788418.

### In vivo study

- Stevens NC, Edwards PC, Tran LM, Ding X, Van Winkle LS, Fiehn O. Metabolomics of Lung Microdissections Reveals Region- and Sex-Specific Metabolic Effects of Acute Naphthalene Exposure in Mice. Toxicol Sci. 2021 Nov 24;184(2):214-222. doi: 10.1093/toxsci/kfab110. PMID: 34498071; PMCID: PMC8633889.
- Kovalchuk N, Zhang QY, Van Winkle L, Ding X. Contribution of Pulmonary CYP-mediated Bioactivation of Naphthalene to Airway Epithelial Injury in the Lung. Toxicol Sci. 2020 Oct 1;177(2):334-346. doi: 10.1093/toxsci/kfaa114. PMID: 32974682; PMCID: PMC7548286.

# Product data sheet



## 7. Bioactivity

### Biological target:

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Naphthalene is an organic compound with formula  $C_{10}H_8$ .

### In vitro activity

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For this purpose, in this study, a series of 10 new naphthalene-chalcone derivatives were synthesized and their anticancer-antibacterial-antifungal properties were investigated. Among the compounds, compound 2j showed activity against the A549 cell line with an  $IC_{50} = 7.835 \pm 0.598 \mu M$ . This compound also has antibacterial and antifungal activity.

Reference: ACS Omega. 2023 Feb 13;8(7):6669-6678. <https://pubmed.ncbi.nlm.nih.gov/36844559/>

### In vivo activity

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In individual lung regions, this study found metabolomic changes in microdissected mouse lung conducting airways and parenchyma obtained from animals sacrificed at 3 timepoints following naphthalene treatment. Importantly, temporal changes were found to be highly distinct for male and female mice with males exhibiting predominant treatment-specific changes only at 2 h postexposure. In females, metabolomic changes persisted until 6 h postnaphthalene treatment, which may explain the previously characterized higher susceptibility of female mice to naphthalene toxicity. In both males and females, treatment-specific changes corresponding to lung remodeling, oxidative stress response, and DNA damage were observed.

Reference: Toxicol Sci. 2021 Nov 24;184(2):214-222. <https://pubmed.ncbi.nlm.nih.gov/34498071/>

*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.*