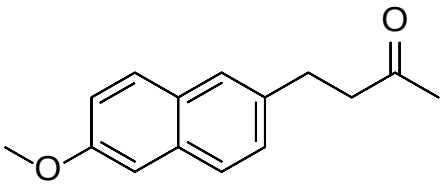
Product data sheet

MedKoo Cat#: 318296 Name: Nabumetone CAS: 42924-53-8 Chemical Formula: $C_{15}H_{16}O_2$ Exact Mass: 228.115 Molecular Weight: 228.2863	
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:

Nabumetone is a non-steroidal anti-inflammatory drug (NSAID), the only 1-naphthaleneacetic acid derivative. It is a nonacidic NSAID that is rapidly metabolized in the liver to a major active metabolite, 6-methoxy-2-naphthyl acetic acid. As found with previous NSAIDs, nabumetone's active metabolite inhibits the cyclooxygenase enzyme and preferentially blocks COX-2 activity (which is indirectly responsible for the production of inflammation and pain during arthritis). The active metabolite of nabumetone is felt to be the compound primarily responsible for therapeutic effect. Comparatively, the parent drug is a poor inhibitor of COX-2 byproducts, particularly prostaglandins. It may be less nephrotoxic than indomethacin.

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	30.0	131.41
DMSO	58.67	256.99
DMSO:PBS (pH 7.2) (1:10)	0.09	0.39
Ethanol	22.5	98.56

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.38 mL	21.90 mL	43.80 mL
5 mM	0.88 mL	4.38 mL	8.76 mL
10 mM	0.44 mL	2.19 mL	4.38 mL
50 mM	0.09 mL	0.44 mL	0.88 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. Qureshi S, Chandra S, Chopra D, Dubey D, Jain V, Roy SK, Ray RS. Nabumetone induced photogenotoxicity mechanism mediated by ROS generation under environmental UV radiation in human keratinocytes (HaCaT) cell line. Toxicol Appl Pharmacol. 2021 Jun 1;420:115516. doi: 10.1016/j.taap.2021.115516. Epub 2021 Mar 30. PMID: 33798594.
2. Vural F, Ozcan MA, Ozsan GH, Ateş H, Demirkan F, Pişkin O, Undar B. Cyclo-oxygenase 2 inhibitor, nabumetone, inhibits proliferation in chronic myeloid leukemia cell lines. Leuk Lymphoma. 2005 May;46(5):753-6. doi: 10.1080/10428190400027860. PMID: 16019514.

In vivo study

Product data sheet

1. Roy HK, Karolski WJ, Wali RK, Ratashak A, Hart J, Smyrk TC. The nonsteroidal anti-inflammatory drug, nabumetone, differentially inhibits beta-catenin signaling in the MIN mouse and azoxymethane-treated rat models of colon carcinogenesis. Cancer Lett. 2005 Jan 20;217(2):161-9. doi: 10.1016/j.canlet.2004.07.042. PMID: 15617833.
2. Melarange R, Gentry C, O'Connell C, Blower PR, Neil C, Kelvin AS, Toseland CD. Anti-inflammatory and gastrointestinal effects of nabumetone or its active metabolite, 6MNA (6-methoxy-2-naphthylacetic acid): comparison with indomethacin. Agents Actions. 1992;Spec No:C82-3. PMID: 1442340.

7. Bioactivity

Biological target:

Nabumetone is an orally active non-acidic anti-inflammatory agent, acts as a potent and selective COX-2 inhibitor, and is the prodrug of the active metabolite 6MNA.

In vitro activity

In this study, a potent COX2 inhibitor, nabumetone (NBT), was investigated for its anti-proliferative and apoptotic effects in K-562 and Meg-01 chronic myeloid leukemia blastic cell lines as a single agent or in combination with adriamycin (ADR) and interferon alpha (IFN-a). In these cell lines, a dose-dependent inhibition of proliferation was observed with NBT.

Reference: Leuk Lymphoma. 2005 May;46(5):753-6. https://pubmed.ncbi.nlm.nih.gov/16019514/

In vivo activity

6MNA, the active metabolite of the non-acidic anti-inflammatory drug nabumetone, was investigated using intravenous administration for effects on (a) carrageenan paw oedema and gastric irritancy compared to either oral nabumetone or both oral and intravenous indomethacin when given acutely and (b) gastrointestinal irritancy when given in repeat dosing studies. An oral dose of nabumetone or intravenous 6MNA produced effective anti-inflammatory activity together with significant inhibition of paw exudate PGE2. An anti-inflammatory oral dose of nabumetone or intravenous 6MNA produced minimal effects on gastric 6-keto-PGF1 alpha production, with an absence of gastric damage, in contrast to indomethacin.

Reference: Agents Actions. 1992;Spec No:C82-3. https://pubmed.ncbi.nlm.nih.gov/1442340/

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.