

Product data sheet



MedKoo Cat#: 526073 Name: Nimesulide CAS: 51803-78-2 Chemical Formula: C ₁₃ H ₁₂ N ₂ O ₅ S Exact Mass: 308.0467 Molecular Weight: 308.308		
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:

Nimesulide is a relatively COX-2 selective, non-steroidal anti-inflammatory drug (NSAID) with pain medication and fever reducing properties.

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	97.31
DMSO	64.0	207.58
DMSO:PBS (pH 7.2) (1:4)	0.20	0.65
Ethanol	1.0	3.24

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.24 mL	16.22 mL	32.43 mL
5 mM	0.65 mL	3.24 mL	6.49 mL
10 mM	0.32 mL	1.62 mL	3.24 mL
50 mM	0.07 mL	0.32 mL	0.65 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

- Genç S, Attar E, Gürdöl F, Kendigelen S, Bilir A, Serdaroğlu H. The effect of COX-2 inhibitor, nimesulide, on angiogenic factors in primary endometrial carcinoma cell culture. Clin Exp Med. 2007 Mar;7(1):6-10. doi: 10.1007/s10238-007-0119-x. PMID: 17380299.
- Vago T, Bevilacqua M, Norbiato G. Effect of nimesulide action time dependence on selectivity towards prostaglandin G/H synthase/cyclooxygenase activity. Arzneimittelforschung. 1995 Oct;45(10):1096-8. PMID: 8595067.

In vivo study

- Joharapurkar A, Kshirsagar S, Patel V, Patel M, Savsani H, Jain M. In vivo antidiabetic activity of nimesulide due to inhibition of amino acid transport. Basic Clin Pharmacol Toxicol. 2022 Jan;130(1):35-43. doi: 10.1111/bcpt.13670. Epub 2021 Oct 25. PMID: 34634192.
- Werner MF, Souza GE, Zampronio AR. Nimesulide-induced antipyresis in rats involves both cyclooxygenase-dependent and independent mechanisms. Eur J Pharmacol. 2006 Aug 14;543(1-3):181-9. doi: 10.1016/j.ejphar.2006.05.029. Epub 2006 May 26. PMID: 16814279.

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7. Bioactivity

Biological target:

Nimesulide is a selective COX-2 inhibitor, with IC₅₀s of 70 nM-70 µM in a time-dependent manner, but it shows no effect on COX-1 (IC₅₀ >100 µM).

In vitro activity

Nimesulide (CAS 51803-78-2) has been shown to inhibit with high selectivity COX-2 without affecting COX-1 activity, so explaining the previous observations about the selectivity of the anti-prostaglandin effect of the drug. Nimesulide inhibited COX-2 activity in a concentration-dependent manner. In conclusion nimesulide's selective inhibitory effect on COX-2 is time-dependent whereas its weak effect on COX-1 is not time-dependent.

Reference: Arzneimittelforschung. 1995 Oct;45(10):1096-8. <https://pubmed.ncbi.nlm.nih.gov/8595067/>

In vivo activity

The effects of nimesulide on lipopolysaccharide (LPS)-induced cerebrospinal prostaglandin E(2) (PGE(2)) and prostaglandin F(2alpha) (PGF(2alpha)) and on plasma tumor necrosis factor-alpha (TNF-alpha) levels were also evaluated. Nimesulide or indomethacin administered i.p 30 min prior LPS, IL-1beta, IL-6, TNF-alpha or arachidonic acid reduced the febrile response and PGE(2) or PGF(2alpha) levels in LPS-febrile rats but did not modify PGE(2)-induced fever. Nimesulide, but not indomethacin, reduced the fever induced by MIP-1alpha, PGF(2alpha), CRF or ET-1.

Reference: Eur J Pharmacol. 2006 Aug 14;543(1-3):181-9. <https://pubmed.ncbi.nlm.nih.gov/16814279/>

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.