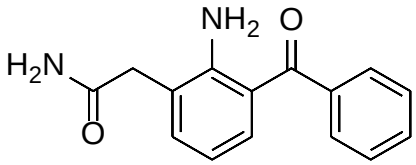
Product data sheet

MedKoo Cat#: 315231 Name: Nepafenac CAS: 78281-72-8 Chemical Formula: $C_{15}H_{14}N_2O_2$ Exact Mass: 254.1055 Molecular Weight: 254.289	
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:

Nepafenac is a non-steroidal anti-inflammatory drug (NSAID), usually sold as a prescription eye drop (0.1% solution. Nepafenac is manufactured by Alcon as Nevanac. It is used to treat pain and inflammation associated with cataract surgery. The usual dose is 1 drop in each affected eye beginning 1 day prior to cataract surgery, continued on the day of surgery and through the first 2 weeks of the postoperative period. Its side effects may include decreased visual acuity, a feeling that something is in the eye, increased eye pressure or a sticky sensation, as well as other effects. (Source: http://en.wikipedia.org/wiki/Nepafenac).

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	117.98
DMSO	60.33	237.26
Ethanol	2.25	8.85

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.93 mL	19.66 mL	39.33 mL
5 mM	0.79 mL	3.93 mL	7.87 mL
10 mM	0.39 mL	1.97 mL	3.93 mL
50 mM	0.08 mL	0.39 mL	0.79 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. Marshall JC, Caissie AL, Cruess SR, Cools-Lartigue J, Burnier MN Jr. The effects of a cyclooxygenase-2 (COX-2) expression and inhibition on human uveal melanoma cell proliferation and macrophage nitric oxide production. J Carcinog. 2007 Nov 27;6:17. doi: 10.1186/1477-3163-6-17. PMID: 18042295; PMCID: PMC2222223.
2. de Souza Filho JP, Correa ZM, Marshall JC, Anteka E, Coutinho AB, Martins MC, Burnier MN. The effect of a selective cyclooxygenase-2 (COX-2) inhibitor on the proliferation rate of retinoblastoma cell lines. Eye (Lond). 2006 May;20(5):598-601. doi: 10.1038/sj.eye.6701938. PMID: 16123787.

In vivo study

1. Marshall JC, Fernandes BF, Di Cesare S, Maloney SC, Logan PT, Antecka E, Burnier MN Jr. The use of a cyclooxygenase-2 inhibitor (Nepafenac) in an ocular and metastatic animal model of uveal melanoma. Carcinogenesis. 2007 Sep;28(9):2053-8. doi: 10.1093/carcin/bgm091. Epub 2007 Apr 13. PMID: 17434930.

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2. Kapin MA, Yanni JM, Brady MT, McDonough TJ, Flanagan JG, Rawji MH, Dahlin DC, Sanders ME, Gamache DA. Inflammation-mediated retinal edema in the rabbit is inhibited by topical nepafenac. Inflammation. 2003 Oct;27(5):281-91. doi: 10.1023/a:1026024409826. PMID: 14635785.

7. Bioactivity

Biological target:

Nepafenac(AHR 9434; AL 6515; Nevanac) is a selective COX-2 inhibitor.

In vitro activity

Nitric oxide production by macrophages was measured after exposure to melanoma-conditioned medium from both groups of cells as well as with and without Amfenac, the active metabolite of Nepafenac. The addition of Amfenac significantly decreased the proliferation rate of all cell lines. Nitric oxide production by macrophages was inhibited by the addition of melanoma conditioned medium, the addition of Amfenac partially overcame this inhibition.

Reference: J Carcinog. 2007 Nov 27;6:17. https://pubmed.ncbi.nlm.nih.gov/18042295/

In vivo activity

The goal of this experiment was to investigate the efficiency of Nepafenac, a topically administered COX-2 inhibitor, in a rabbit model of UM (uveal melanoma). The control group developed more intraocular tumors and presented with metastases and higher detectable levels of CMCs before the treated group.

Reference: Carcinogenesis. 2007 Sep;28(9):2053-8. https://pubmed.ncbi.nlm.nih.gov/17434930/

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.