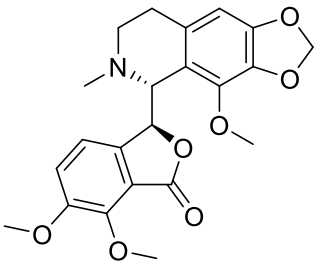


Product data sheet



MedKoo Cat#: 329459 Name: Noscapine HCl CAS: 912-60-7 (HCl) Chemical Formula: C ₂₂ H ₂₄ ClNO ₇ Molecular Weight: 449.884	 H-Cl
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:

Noscapine, also known as Narcotine, Nectodon, Nospen, Anarcotine and (archaic) Opiane, is a benzylisoquinoline alkaloid from plants of the poppy family, without painkilling properties. This agent is primarily used for its antitussive (cough-suppressing) effects. Noscapine's antitussive effects appear to be primarily mediated by its σ -receptor agonist activity. Evidence for this mechanism is suggested by experimental evidence in rats. Pretreatment with rimcazole, a σ -specific antagonist, causes a dose-dependent reduction in antitussive activity of noscapine. Noscapine, and its synthetic derivatives called noscapinoids, are known to interact with microtubules and inhibit cancer cell proliferation.

Noscapine HCl was discontinued.

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	66.68
DMSO	30.0	66.68
DMSO:PBS (pH 7.2) (1:1)	0.5	1.11
Ethanol	1.0	2.22

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.22 mL	11.11 mL	22.23 mL
5 mM	0.44 mL	2.22 mL	4.45 mL
10 mM	0.22 mL	1.11 mL	2.22 mL
50 mM	0.04 mL	0.22 mL	0.44 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

- Akhter S, Irfan HM, Alamgeer, Ullah A, Jahan S, Roman M, Latif MB, Mustafa Z, Almutairi FM, Althobaiti YS. Noscapine hydrochloride (benzyl-isoquinoline alkaloid) effectively prevents protein denaturation through reduction of IL-6, NF-kB, COX-2, Prostaglandin-E2 in rheumatic rats. Saudi Pharm J. 2022 Dec;30(12):1791-1801. doi: 10.1016/j.jsps.2022.10.008. Epub 2022 Oct 19. PMID: 36601515; PMCID: PMC9805980.
- Sung B, Ahn KS, Aggarwal BB. Noscapine, a benzylisoquinoline alkaloid, sensitizes leukemic cells to chemotherapeutic agents and cytokines by modulating the NF-kappaB signaling pathway. Cancer Res. 2010 Apr 15;70(8):3259-68. doi: 10.1158/0008-5472.CAN-09-4230. Epub 2010 Mar 30. PMID: 20354190; PMCID: PMC2855771.

Product data sheet



In vivo study

1. Landen JW, Lang R, McMahon SJ, Rusan NM, Yvon AM, Adams AW, Sorcinelli MD, Campbell R, Bonaccorsi P, Ansel JC, Archer DR, Wadsworth P, Armstrong CA, Joshi HC. Noscapine alters microtubule dynamics in living cells and inhibits the progression of melanoma. *Cancer Res.* 2002 Jul 15;62(14):4109-14. PMID: 12124349.

2. Mahmoudian M, Mojaverian N. Effect of noscapine, the antitussive opioid alkaloid, on bradykinin-induced smooth muscle contraction in the isolated ileum of the guinea-pig. *Acta Physiol Hung.* 2001;88(3-4):231-7. doi: 10.1556/APhysiol.88.2001.3-4.5. PMID: 12162581.

7. Bioactivity

Biological target:

An alkaloid with anticancer and antitussive activities.

In vitro activity

Noscapine suppressed both inducible and constitutive NF-kappaB activation in tumor cells through inhibition of IkappaB kinase, leading to inhibition of phosphorylation and degradation of IkappaBalpha. Noscapine also suppressed phosphorylation and nuclear translocation of p65, leading to inhibition of NF-kappaB reporter activity induced by various components of the NF-kappaB activation pathway.

Reference: *Cancer Res.* 2010 Apr 15;70(8):3259-68. <https://pubmed.ncbi.nlm.nih.gov/20354190/>

In vivo activity

In a syngeneic murine model of established s.c. melanoma, noscapine treatment resulted in an 85% inhibition of tumor volume on day 17 when delivered by gavage compared with untreated animals ($P \leq 0.01$), without evidence of toxicity to the spleen, liver, duodenum, bone marrow, or peripheral blood. This inhibition was greater than that seen in vivo by paclitaxel (Taxol) alone and similar to the inhibition of tumor volume observed when noscapine was combined with paclitaxel. Importantly, noscapine also demonstrated the ability to significantly inhibit melanoma progression by 83% on day 18 when delivered in drinking water ($P \leq 0.01$) and conferred a significant survival advantage ($P \leq 0.01$).

Reference: *Cancer Res.* 2002 Jul 15;62(14):4109-14. <https://pubmed.ncbi.nlm.nih.gov/12124349/>

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.