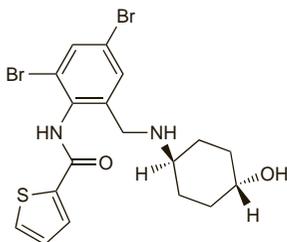


Naphoptic-A; Ocuhist; Opcon-A; VasoClear-A; VasoClear†; Vasocon-A; Visine-A; **Venez.**: Camolyn Plus; Fesanol†; Pinazo; Soltin; Soluclear.
Used as an adjunct in: **Fr.**: Xylocaine; **Spain**: Anestésico.

Neltenexine (rINN)

Neltenexina; Nelténexine; Neltenexinum. 4',6'-Dibromo- α -[(trans-4-hydroxycyclohexyl)amino]-2-thiophene-carboxy-*o*-toluidide.

Нелтенексин
C₁₈H₂₀Br₂N₂O₂S = 488.2.
CAS — 99453-84-6.
ATC — R05CB14.
ATC Vet — QR05CB14.



Profile

Neltenexine is a mucolytic that has been used in respiratory disorders associated with productive cough (p.1547). It has been given orally as the monohydrate, in usual doses of 37.4 mg three times daily. Neltenexine has also been given rectally as the hydrochloride.

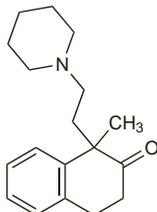
Preparations

Proprietary Preparations (details are given in Part 3)
Ital.: Alveoten; Muco4; Tenoxol.

Nepinalone (rINN)

Nepinalona; Népinalon; Nepinalonum. (±)-3,4-Dihydro-1-methyl-1-(2-piperidinoethyl)-2(1*H*)-naphthalenone.

Непиналон
C₁₈H₂₅NO = 271.4.
CAS — 22443-11-4.
ATC — R05DB26.
ATC Vet — QR05DB26.



Profile

Nepinalone has been used as the hydrochloride as a cough suppressant in non-productive cough (p.1547). Oral doses of nepinalone hydrochloride 10 mg have been given three times daily.

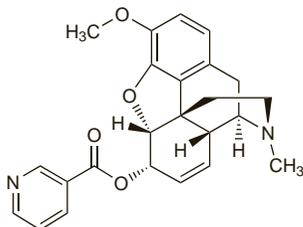
Preparations

Proprietary Preparations (details are given in Part 3)
Ital.: Nepitus; Placatus; Tussolvina.

Nicocodine (BAN, rINN)

Nicocodina; Nicocodinum. 6-Nicotinoylcocodeine; 3-O-Methyl-6-*O*-nicotinoylmorphine.

Никокодин
C₂₄H₂₄N₂O₄ = 404.5.
CAS — 3688-66-2.



Profile

Nicocodine is an opioid related to codeine (p.37). It has been used as the hydrochloride for its central cough suppressant effects in non-productive cough (p.1547). Nicocodine hydrochloride is given orally in doses of 5 to 7.5 mg up to three times daily.

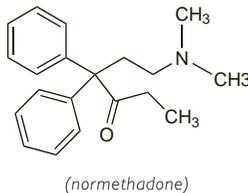
Preparations

Proprietary Preparations (details are given in Part 3)
Austria: Tusscodin.

Normethadone Hydrochloride (BANM, rINNM)

Desmethylnormethadone Hydrochloride; Hidrocloruro de normetadone; Hoechst-10582 (normethadone); Normethadone, Chlorhydrate de; Normethadoni Hydrochloridum; Nerylidimazone Hydrochloride. 6-Dimethylamino-4,4-diphenylhexan-3-one hydrochloride.

Норметадона Гидрохлорид
C₂₀H₂₅NO.HCl = 331.9.
CAS — 467-85-6 (normethadone); 847-84-7 (normethadone hydrochloride).
ATC — R05DA06.
ATC Vet — QR05DA06.



Profile

Normethadone is closely related to methadone (p.82). The hydrochloride is given orally as a cough suppressant in preparations for non-productive cough.

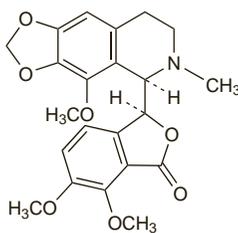
Preparations

Proprietary Preparations (details are given in Part 3)
Multi-ingredient: **Canad.**: Cophylac.

Noscapine (BAN, rINN)

Narcotine; L- α -Narcotine; Noscapina; Noscapinum; Noskapiini; Noskapiin; Noskapiinas; Noszkapiin; NSC-5366. (3*S*)-6,7-Dimethoxy-3-[(5*R*)-5,6,7,8-tetrahydro-4-methoxy-6-methyl-1,3-dioxolo[4,5-*g*]isoquinolin-5-yl]phtalide.

Носкапин
C₂₂H₂₃NO₇ = 413.4.
CAS — 128-62-1.
ATC — R05DA07.
ATC Vet — QR05DA07.



Description. Noscapine is an alkaloid obtained from opium.

Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, *Jpn.*, and *US*.
Ph. Eur. 6.2 (Noscapine). A white or almost white, crystalline powder or colourless crystals. Practically insoluble in water at 20°, very slightly soluble at 100°; slightly soluble in alcohol; soluble in acetone; dissolves in strong acids although the base may be precipitated on dilution with water. Protect from light.
USP 31 (Noscapine). A fine, white or practically white, crystalline powder. Practically insoluble in water; slightly soluble in alcohol and in ether; soluble in acetone; freely soluble in chloroform.

Noscapine Camsilate (BANM, rINNM)

Camphoscapine; Camsilato de noscapina; Noscapine, Camsilate de; Noscapine Camsylate; Noscapini Camsilas. Noscapine camphor-10-sulphonate.

Носкапина Камзилат
C₂₂H₂₃NO₇. C₁₀H₁₆O₄S = 645.7.
CAS — 25333-79-3.
ATC — R05DA07.
ATC Vet — QR05DA07.

Noscapine Hydrochloride (BANM, rINNM)

Hidrocloruro de noscapina; Narcotine Hydrochloride; Noscapine, chlorhydrate de; Noscapini hydrochloridum; Noscapini Hydrochloridum Monohydratum; Noscapinum Chloride; Noskapiinihydrokloridi; Noskapiin hydrochlorid monohydrát; Noskapiinhydroklorid; Noskapiino hidrochloridas; Noskapiiny chlorowodorek; Noszkapiin-hidroklorid.

Носкапина Гидрохлорид
C₂₂H₂₃NO₇.HCl.H₂O = 467.9.
CAS — 912-60-7 (anhydrous noscapine hydrochloride).
ATC — R05DA07.
ATC Vet — QR05DA07.

Pharmacopoeias. In *Eur.* (see p.vii) and *Int.* (both with H₂O); in *Jpn* (with xH₂O).

Ph. Eur. 6.2 (Noscapine Hydrochloride). A white or almost white, hygroscopic, crystalline powder or colourless crystals. Freely soluble in water and in alcohol. Aqueous solutions are faintly acid; the base may be precipitated when the solutions are allowed to stand. A 2% solution in water has a pH of not less than 3.0. Protect from light.

Adverse Effects and Precautions

As for Dextromethorphan, p.1555. Hypersensitivity reactions have been reported.

Breast feeding. Maximum concentrations of noscapine in the breast milk of 8 women given 100 or 150 mg of noscapine ranged¹ from 11 to 83 nanograms/mL. It was estimated that breast-fed infants of mothers receiving noscapine 50 mg three times daily would ingest at most 300 nanograms/kg of noscapine, an amount considered unlikely to be a hazard. No adverse effects have been seen in breast-fed infants whose mothers were given noscapine, and the American Academy of Pediatrics² considers that it is therefore usually compatible with breast feeding.

- Olsson B, *et al.* Excretion of noscapine in human breast milk. *Eur J Clin Pharmacol* 1986; **30**: 213–15.
- American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001; **108**: 776–89. Correction. *ibid.*; 1029. Also available at: <http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/3/776> (accessed 13/12/06)

Pregnancy. The UK CSM stood by their recommendation¹ that products containing noscapine should be contra-indicated in women of child-bearing potential (because of potential mutagenic effects²), after criticism that the decision was based solely on the results of *in-vitro* work.³

- Asscher AW, Fowler LK. Papaveretum in women of childbearing potential. *BMJ* 1991; **303**: 648.
- Committee on Safety of Medicines. Genotoxicity of papaveretum and noscapine. *Current Problems* 31 1991. Also available at: http://www.mhra.gov.uk/home/idcplg?IdcService=GET_FILE&dDocName=CON2024449&RevisionSelectionMethod=LatestReleased (accessed 21/03/07)
- Allen S, *et al.* Papaveretum in women of child bearing potential. *BMJ* 1991; **303**: 647.

Interactions

Noscapine should not be given with alcohol or other CNS depressants.

Anticoagulants. For mention of a possible interaction between noscapine and warfarin, see Cough Suppressants, p.1430.

Pharmacokinetics

◇ References.

- Karlsson MO, *et al.* Pharmacokinetics of oral noscapine. *Eur J Clin Pharmacol* 1990; **39**: 275–9.
- Karlsson MO, Dahlstrom B. Serum protein binding of noscapine: influence of a reversible hydrolysis. *J Pharm Pharmacol* 1990; **42**: 140–3.

Uses and Administration

Noscapine is a centrally acting cough suppressant that has actions and uses similar to those of dextromethorphan (p.1556). It is given in an oral dose of up to 50 mg three times daily. It is also used rectally. Noscapine has also been given as the ascorbate, camsilate, embonate, and the hydrochloride.

Preparations

Proprietary Preparations (details are given in Part 3)

Belg.: Nosca-Merprepine; Noscafex; **Chile**: Factoss†; **Ger.**: Capval; **Hong Kong**: Recoma; **Indon.**: Longatin; Mercotin; **Neth.**: Roter Noscapeet; Streptuss kniebelhoest†; **S.Afr.**: Nittepa; **Spain**: Tuscalman; **Swed.**: Nipaxon; **Switz.**: Tussanil N.

Multi-ingredient: **Arg.**: Funciobron; Graneodin N; Jarabe Bago†; No-Tos Pocket; Saltos Infantil†; Saltos†; Tosedrin Compuesto; Vi-Balsabron†; **Austria**: Pneumopect; Tuscalman; **Belg.**: Noscafex; Rosils†; **Braz.**: Expectussin†; Ipecol†; **Chile**: AB Antitusivo; Captus; Congestex; Cotibin Flu†; Freshmel Tos; Graneodin N†; Graneodin-Tos; Gripeixin Limonada Caliente; Gripeixin Nueva Formula Compuesto†; Kitadol Flu Noche†; Kitadol Flu†; Pectoserum†; Tapsin Compuesto; Tapsin Compuesto con Clorfenamina; Tapsin Compuesto Dia/Noche Plus; Tapsin Compuesto DN; Tapsin Limonada DN†; Tapsin Limonada Dia†; Tapsin Limonada Noche†; **Fin.**: Codesan N†; Posivil†; **Fr.**: Tussisedal; **Hong Kong**: Asmeton; Coldcap-A; Coldrex†; Coldtab-2; Mefedra-N†; Panadol Cold & Flu Extra; **India**: Coscopin; Coscopin Plus; **Indon.**: Flunadin; Noscapax; Paratusin; Tilomix; **Swed.**: Spasmofen; **Switz.**: Brosoline-Rectocaps†; DemoTussil; Hederix; Noscorex; Spasmosol; Tossamine; Tossamine plus; Tuscalman; Tussanil Compositum†; **Thai.**: Asmeton†; **Turk.**: Coldeks.