

**Metizoline Hydrochloride** (BANM, USAN, rINN) ⊗

EX-10-781; Hidrocloruro de metizolina; Métizoline, Chlorhydrate de; Metizolini Hydrochloridum; Metizoline Hydrochloride; RMI-10482A. 2-(2-Methylbenzo[b]thienylmethyl)-2-imidazoline hydrochloride.

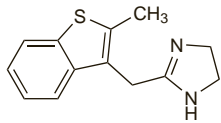
Метизолина Гидрохлорид

$C_{13}H_{14}N_2S \cdot HCl = 266.8$ .

CAS — 17692-22-7 (metizoline); 5090-37-9 (metizoline hydrochloride).

ATC — R01AA10.

ATC Vet — QR01AA10.



(metizoline)

NOTE. The name benzazoline has been used as a synonym for metizoline. Care should be taken to distinguish it from benazolin (4-chloro-2,3-dihydro-2-oxo-1,3-benzothiazol-3-ylacetic acid,  $C_8H_6ClNO_3S = 243.7$ ), which is a herbicide. Also do not confuse with benzazoline (see Tolazoline, p.1415), which is a vasodilator.

**Profile**

Metizoline hydrochloride is a sympathomimetic with effects similar to those of naphazoline (p.1565) that has been used for its vasoconstrictor activity in the treatment of nasal congestion.

**Morclofene** (rINN)

Dimedlofenone; Morclofona; Morclofonum; Morclophon. 4'-Chloro-3,5-dimethoxy-4-(2-morpholinoethoxy)benzophenone.

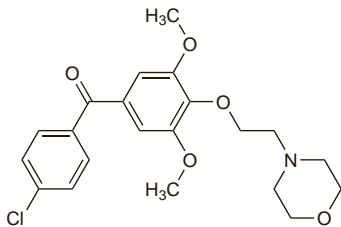
Морклофон

$C_{21}H_{24}ClNO_5 = 405.9$ .

CAS — 31848-01-8 (morclofene); 31848-02-9 (morclofene hydrochloride).

ATC — R05DB25.

ATC Vet — QR05DB25.

**Profile**

Morclofene is a centrally acting cough suppressant used for non-productive cough (p.1547); it is given orally in usual doses of 150 mg four or five times daily. It has also been given as the hydrochloride.

**Preparations**

**Proprietary Preparations** (details are given in Part 3)

**Ital.**: Plausitin; **Switz.**: Nitux.

**Naphazoline** (BAN, rINN) ⊗

Nafatsoliini; Nafazolin; Nafazolina; Naphazolinum. 2-(1-Naphthylmethyl)-2-imidazoline.

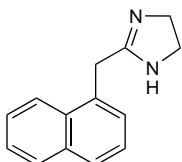
Нафазолин

$C_{14}H_{14}N_2 = 210.3$ .

CAS — 835-31-4.

ATC — R01AA08; R01AB02; S01GA01.

ATC Vet — QR01AA08; QR01AB02; QS01GA01.

**Naphazoline Hydrochloride** (BANM, rINN) ⊗

Hidrocloruro de nafazolina; Nafatsoliinihydrokloridi; Nafazolin Hidroklorür; Nafazolin-hidroklorid; Nafazolin-hydrochlorid; Nafazolinhydroklorid; Nafazolino hidrochloridas; Naphazoline, chlorhydrate de; Naphazolini hydrochloridum.

Нафазолина Гидрохлорид

$C_{14}H_{14}N_2 \cdot HCl = 246.7$ .

CAS — 550-99-2.

ATC — R01AA08; R01AB02; S01GA01.

ATC Vet — QR01AA08; QR01AB02; QS01GA01.

**Pharmacopoeias.** In *Chin.*, *Eur.* (see p.vii), *Jpn.* and *US*.

**Ph. Eur. 6.2** (Naphazoline Hydrochloride). A white or almost white, crystalline powder. Freely soluble in water; soluble in alcohol. Protect from light.

**USP 31** (Naphazoline Hydrochloride). A white, odourless, crystalline powder. Freely soluble in water and in alcohol; very slightly soluble in chloroform; practically insoluble in ether. pH of a 1% solution in water is between 5.0 and 6.6. Store in airtight containers. Protect from light.

**Naphazoline Nitrate** (BANM, rINN) ⊗

Nafatsoliininitraatti; Nafazolin Nitrat; Nafazolininitrat; Nafazolin-nitrát; Nafazolino nitratas; Nafazolinyl azotan; Naphazoline, nitrate de; Naphazolini nitrás; Naphazolinium Nitricum; Naphthizinum; Nitrate de nafazolina.

Нафазолина Нитрат

$C_{14}H_{14}N_2 \cdot HNO_3 = 273.3$ .

CAS — 5144-52-5.

ATC — R01AA08; R01AB02; S01GA01.

ATC Vet — QR01AA08; QR01AB02; QS01GA01.

**Pharmacopoeias.** In *Eur.* (see p.vii), *Jpn.* and *Viet*.

**Ph. Eur. 6.2** (Naphazoline Nitrate). A white or almost white, crystalline powder. Sparingly soluble in water; soluble in alcohol. A 1% solution in water has a pH of 5.0 to 6.5. Protect from light.

**Adverse Effects, Treatment, and Precautions**

As for Sympathomimetics, p.1407; naphazoline has mainly alpha-agonist effects. After local use, transient irritation may occur. Rebound congestion may occur after frequent or prolonged use. Systemic effects, including nausea, headache, and dizziness have occurred after topical use. Overdosage or accidental dosage by mouth may cause CNS depression with marked reduction of body temperature and bradycardia, sweating, drowsiness, and coma, particularly in children; it should be used with great caution, if at all, in infants and young children. Use of naphazoline in the eye may liberate pigment granules from the iris, especially when given in high doses to elderly patients. Hypertension may be followed by rebound hypotension. Treatment of adverse effects is symptomatic.

**Effects on the eyes.** For mention of conjunctivitis induced by ophthalmic decongestant preparations containing naphazoline, see under Phenylephrine, p.1568.

**Intraoperative use.** A report<sup>1</sup> of 2 cases of toxicity associated with intraoperative use of a naphazoline-soaked sponge to control excessive bleeding after adenoidectomy. Both patients experienced hypertension and reflex bradycardia, which evolved in one case into marked hypotension. There was evidence of CNS depression with a reduced respiration rate and prolonged recovery from anaesthesia.

1. Wenzel S, et al. Course and therapy of intoxication with imidazoline derivative naphazoline. *Int J Pediatr Otorhinolaryngol* 2004; **68**: 979–83.

**Interactions**

Since naphazoline is absorbed through the nasal mucosa interactions may follow topical application. The *BNF* considers that all sympathomimetic nasal decongestants may cause a hypertensive crisis if used during treatment with an MAOI. For the interactions of sympathomimetics in general, see p.1407.

**Pharmacokinetics**

Systemic absorption has been reported after topical use of solutions of naphazoline. It is not given systemically, but it is readily absorbed from the gastrointestinal tract. Naphazoline instilled into the eye causes conjunctival vasoconstriction within 10 minutes and effects can last for up to 6 hours.

**Uses and Administration**

Naphazoline is a sympathomimetic (p.1408) with marked alpha-adrenergic activity. It is a vasoconstrictor with a rapid and prolonged action in reducing swelling and congestion when applied to mucous membranes.

Naphazoline and its salts are used for the symptomatic relief of nasal congestion (p.1548). Solutions containing 0.05 to 0.1% of the hydrochloride or the nitrate may be applied topically as nasal drops or a spray usually up to once every 6 hours. Children aged 7 years and over have used a preparation containing 0.05%.

Solutions containing up to 0.1% of naphazoline hydrochloride have been instilled into the eye as a conjunctival decongestant (see Conjunctivitis, p.564).

Naphazoline has been used as a vasoconstrictor with local anaesthetics.

Naphazoline acetate has also been used in nasal preparations.

**Preparations**

**USP 31:** Naphazoline Hydrochloride and Pheniramine Maleate Ophthalmic Solution; Naphazoline Hydrochloride Nasal Solution; Naphazoline Hydrochloride Ophthalmic Solution.

**Proprietary Preparations** (details are given in Part 3)

**Arg.**: Actifedrin Nasal; Bactio Rhin; Bano Ocular Agrand; Dazolin; Disel; Gotabiotic D; Gotinal; Let-Nasik; Mirasan; Mirus-S; Nafazolex; Nasalex; Privina; Rhinal; **Austral.**: Albalon; Clear Eyes; Naphcon; Optazine; **Austria**: Aconex; Coldan; Isoflar; Mertan; Privin; Rhinoperd; **Belg.**: Albalon; Deltarhinol-Mono; Naphcon; Neusinol; Pricasol; Vasocedine; **Braz.**: Clarivit; Clarof; Multisor; Nariaf; Narix; Nazicol; Neosoro; Privina; Rino Resfenol; Rinos-A; **Canad.**: Ak-Con; Albalon; Allergy Drops; Clear Eyes; Diophtin; Naphcon Forte; Red Away; Vascon; **Chile**: Albasol; Clarimir; Red Off; Vi-Clear; **Cz.**: Proclint; Sanorin; **Ger.**: Idri N sine†; Pniol Nasenspray; Privin; Proclint; Rhinex mit Naphazolin; Tele-Stuf; **Gr.**: Coldan; Naphcon; **Hong Kong**: Albalon; All Clear; **Hung.**: Naphcon†; Proclint; **India**: Clearine; Ocustress; **Indon.**: Optrine; **Israel**: Naphasal; Naphcon Forte; **Ital.**: Collirio Alfa; Desamin Same; Imidaz†; Indina Due; Nafazolina; Pupilla; Rinazina; Rino Nafazolina; Video-Mil; Virginiana Gocce Verd†; **Malaysia**: Albalon; **Mex.**: Afazol; Alphadinal; Celunaf; Fazolil; Gotinal; Nazil; **Neth.**: Albalon; **NZ**: Albalon†; Clear Eyes; Naphcon; **Philipp.**: Cosooth; **Pol.**: Rhinazin; **Rus.**: Naphthyzin (Нафтизин); Sanorin (Санорин); **S.Afr.**: Murine Clear Eyes†; Salfy Bleu; **Spain**: Alfa; Euboral; Miradlar; Vasoconstrictor Pensar; **Swed.**: Rimidol†; **Switz.**: Albalon; Minha†; **Thai.**: Albalon; Naphcon; **Turk.**: Deltarhinol; Enflucide; **UK**: Murine; **USA**: Ak-Con; Albalon; All Clear; Allerest†; Allergy Drops†; Clear Eyes; Clear Eyes Plus Redness Relief; Comfort Eye Drops†; Dagest†; Nafazair†; Napha Forte; Naphcon; Privine; Vascon†; **Venez.**: Clarasol; Clearize; Fanasal†; Fazolil; Fazinol†; Gotinal; Nafin†; Naphcon; Nas; Niazol; Nina-zo.

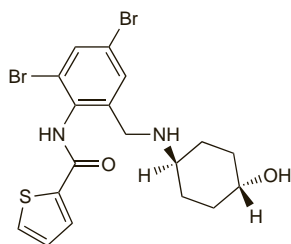
**Multi-ingredient. Arg.**: Alercortil†; Alvo Nasal†; Antibiocort†; Bactio Rhin Prednisolona; Bideon; Biotar Nasal; Dexafurazon†; Dexalergin; Disel Hydrocortisona; Drynasin; Factioneye; Fadanasal; Gramicortil†; Hyalcom; Mira Klonal; Mirus; Nasjoll†; Nasomicina; Neo-Curnin; Neodexa Plus; Neofedil†; Neosona; Nexadron Compuesto; Nexadron Plus; Panoptic; Provacsin Nasal; Refenax Colirio; Refenax Gotas Nasaes; Rinoflix AG M; Rinogel; Suavithiol; Vistacoloran†; **Austral.**: Albalon-A; Antistine-Privine; In A Wink†; Naphcon-A; Optrex; Visine Allergy with Antihistamine; **Austria**: Coldistan; Coldophthal; Histophthal; Luuf-Nasenspray; Ophtaguttal; Rhinodrin; Rhinop; Rhinoperd comp; **Belg.**: Diphenhydramine Constrictor†; Minhavez; Naphcon-A; Neofenox; Sofraline; Sofrasolone; Zincfrin Antihistaminicum†; **Braz.**: Alergortox Nasal†; Clari; Colirio Legrand; Colirio Moura Brasil; Colirio Teuto; Conidrin; Fluo-Vaso; Hemodotil†; Hidrocin; Inhadinal†; Lerin; Maxibell; Mentodrin†; Nardirin; Nanfluc; Naso-Josp†; Nazobell†; Nazoblor†; Neo Quimica Colirio; Nitrilene; Novo Rino; Rhinosept; Rinisone; Rinosept†; Sinustrast Vasoconstrictor; Sonine Adult; Stilux; Visazul; Visiplex; Visolon; Visual†; Zincolol; **Canad.**: Albalon-A; Clear Eyes Allergy; Collyre Bleu†; Diophtin A; Naphcon-A; Onrectal; Opcon-A; Vasocon-A†; Visine Advance Allergy; Zincfrin-A; **Chile**: Albasol A†; Clarimir F; Dessolets; Miral; Mirus†; Naphcon-A; Naphtears; Nico Drops; Novo-Tears; Oculosan; Ofallirio; Red Off Aqua; Red Off Plus; **Cz.**: Sanorin-Analergin; **Denm.**: Ansal; Antistina-Privin; Sesal; **Fin.**: Antistin-Privin†; Zincfrin-A†; **Fr.**: Collyre Bleu; Derinox; **Ger.**: Antistin-Privin; Diabencil-Rhinex†; duraultra; Konjunktival Thilo†; Oculosan N; Rhinoguttatex Dexamethasoni cum Naphazolin†; Rhinosevit†; Sizozoo; Stipol†; **Gr.**: Neo-Priphen; Oculosan; Septobore; Zabysept; **Hong Kong**: Clear Blue; Frazolin; Konjunktival†; Naphcon-A; Nazin; Oculosan; Opcon-A; **Hung.**: Coldistan†; **India**: Andre-I-Kul; Betnesol-N Nasal; Eforlin; Fenox; Ocuress†; Ocuress-A†; Ocuress-Z; Proto-Boric; **Indon.**: Flamerg; Indoflin-A; Isotic Azora; Naphcon-A; Oculosan; Zinctopto; **Israel**: Alnase; Antistin-Privin†; Nodryl†; Optry†; Phenylphrine-Azol†; Proaf; **Ital.**: Allafall; Antisetico Astringente Sedativo; Antistin-Privina; Collirio Alfa Antistaminico; Corinzina†; Deltarinol; Fotofil; Genalfa; Idioneomicil†; Imidazyl Antistaminico; Indaco; Istamina; Nafcon A†; Oftalmil; Pupilla Antistaminico; Rinocindina; Rinoformetil†; Zinc-Imizol; **Malaysia**: Alergofall; Napha A; Naphcon-A; Oculosan†; **Mex.**: Afazol Z; Biofrin; Biotarson O; Eyrasil; Istasol; Midazol Ofteno; Mirus; Naphacel; Naphtears; Oftalirio†; Opcon-A; Solticor con Lagrilm; Solutina; Sulf; Zincfrin-A; **NZ**: Albalon-A†; Betnesol Aqueous; Clear Eyes ACR†; Dagest 2†; Naphcon-A; Optrex Red-Eye Relief; Visine Allergy; **Philipp.**: Deccocon A; Moisturizing All Clear; Naphcon-A; Oculosan; Optaphen; **Pol.**: Betadrin; Cincol; Dermophenazol; Mibalin; Oculosan; Oftophenazol; Rhinophenazol; Sulfarinol; **Port.**: Alergitalmina; Colircusi Anestésico; Naso-Prieulina†; **Rus.**: Betadrin (Бетадрин); Polynadim (Полинадим); Sanorin (Санорин); Sanorin-Analergin (Санорин-аналергин); **S.Afr.**: Albalon-A†; Antistin-Privin; Covomycin; Covosan; ENT; Nasdro; Oculosan; Universal Nasal Drops; Zincfrin-A; **Singapore**: Antistin-Privin; Flucur†; Naphcon-A; **Spain**: Alergofall; Centilux; Cloram Zing; Colirioclina Adren Astr†; Epistaxol; Kanafosal; Kanafosal Predni; Oftalmol Ocular; Ojoseb; Rinovel; Zolina; **Swed.**: Antasten-Privin; **Switz.**: Antistin-Privin; Collyre Albait†; Collyre Bleu Laiter; Gouttes nasales N†; Oculosan; Spray nasal comp pour adultes; **Thai.**: Levoptin; Naphcon-A; Oculosan; **Turk.**: Alergofall; Sulfarin; **UK**: Eye Dew; Optrex Red Eyes; **USA**: 4-Way Fast Acting; Antazoline-V; Clear Eyes Seasonal Relief; Maximum Strength Allergy Drops; Nafazair A†; Naphazoline Plus; Naphcon-A;

Naphotic-A; Ocuhist; Opcon-A; VasoClear A; VasoClear; Vasocon-A; Vissine-A; **Venez.**: Camolyn Plus; Fesanol; Pinazo; Soltin; Soluclear.  
Used as an adjunct in: **Fr.**: Xylocaine; **Spain**: Anestisco.

### Neltenexine (rINN)

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

Нелтенексин  
C<sub>18</sub>H<sub>20</sub>Br<sub>2</sub>N<sub>2</sub>O<sub>2</sub>S = 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.

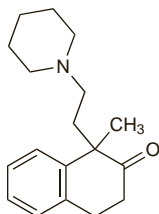
### Preparations

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

### Nepinalone (rINN)

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

Непиналон  
C<sub>18</sub>H<sub>25</sub>NO = 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.

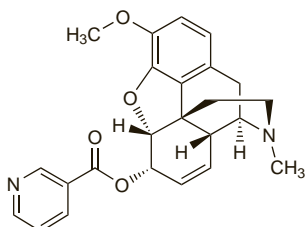
### Preparations

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

### Nicocodine (BAN, rINN)

Nicocodina; Nicocodinum. 6-Nicotinoylcodeine; 3-O-Methyl-6-O-nicotinoylmorphine.

Никокордин  
C<sub>24</sub>H<sub>24</sub>N<sub>2</sub>O<sub>4</sub> = 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.

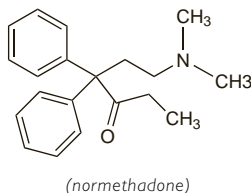
### Preparations

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

### Normethadone Hydrochloride (BANM, rINNM)

Desmethylmethadone Hydrochloride; Hidrocloruro de normetadona; Hoechst-10582 (normethadone); Norméthadone, Chlorhydrate de; Normethadoni Hydrochloridum; Phenylidimazone Hydrochloride. 6-Dimethylamino-4,4-diphenylhexan-3-one hydrochloride.

Норметадона Гидрохлорид  
C<sub>20</sub>H<sub>25</sub>NO<sub>2</sub>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.

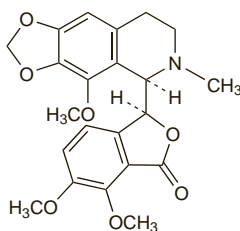
### Preparations

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

### Noscapine (BAN, rINN)

Narcotine; L- $\alpha$ -Narcotine; Noscapina; Noscapinum; Noskapiini; Noskapin; Noskapias; Noszkapin; NSC-5366. (3S)-6,7-Dimethoxy-3-[(5R)-5,6,7,8-tetrahydro-4-methoxy-6-methyl-1,3-dioxolo[4,5-g]isoquinolin-5-yl]phthalide.

Носкапин  
C<sub>22</sub>H<sub>23</sub>NO<sub>7</sub> = 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  
C<sub>22</sub>H<sub>23</sub>NO<sub>7</sub> · C<sub>10</sub>H<sub>16</sub>O<sub>4</sub>S = 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 Monohydricum; Noscapinum Chloride; Noskapiinihydrokloridi; Noskapin hydrochlorid monohydrát; Noskapinhydroklorid; Noskapino hidrochloridas; Noskapiyny chlorowodorek; Noszkapin-hidroklorid.

Носкапина Гидрохлорид  
C<sub>22</sub>H<sub>23</sub>NO<sub>7</sub> · HCl · H<sub>2</sub>O = 467.9.  
CAS — 912-60-7 (anhydrous noscapine hydrochloride).  
ATC — R05DA07.  
ATC Vet — QR05DA07.

**Pharmacopoeias.** In *Eur.* (see p.vii) and *Int.* (both with H<sub>2</sub>O); in *Jpn* (with xH<sub>2</sub>O).

**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 ranged<sup>1</sup> 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 Pediatrics<sup>2</sup> considers that it is therefore usually compatible with breast feeding.

1. Olsson B, *et al.* Excretion of noscapine in human breast milk. *Eur J Clin Pharmacol* 1986; **30**: 213–15.
2. 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 recommendation<sup>1</sup> that products containing noscapine should be contra-indicated in women of child-bearing potential (because of potential mutagenic effects<sup>2</sup>), after criticism that the decision was based solely on the results of *in-vitro* work.<sup>3</sup>

1. Asscher AW, Fowler LK. Papaveretum in women of childbearing potential. *BMJ* 1991; **303**: 648.
2. 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](http://www.mhra.gov.uk/home/idcplg?IdcService=GET_FILE&dDocName=CON2024449&RevisionSelectionMethod=LatestReleased) (accessed 21/03/07)
3. 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.

1. Karlsson MO, *et al.* Pharmacokinetics of oral noscapine. *Eur J Clin Pharmacol* 1990; **39**: 275–9.
2. 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-Mereprine; Noscafex; **Chile**: Factoss; **Ger.**: Capval; **Hong Kong**: Recoma; **Indon.**: Longatin; Mercotin; **Neth.**: Roter Noscapekt; Streptuss kriebelheest; **S.Afr.**: Nitpeax; **Spain**: Tuscalman; **Swed.**: Nipax-on; **Switz.**: Tussanil N.

**Multi-ingredient**: **Arg.**: Funciobron; Graneodin N; Jarabe Bago; No-Tos Pocket; Saltos Infantil; Saltos; Tosedrin Compuesto; Vi-Balsabron; **Austria**: Pneumopekt; Tuscalman; **Belg.**: Noscafex; Rosil; **Braz.**: Expectussin; Ipecol; **Chile**: AB Antitussin; Captus; Congestex; Cotibin Flu; Freshmel Tos; Graneodin N; Graneodin-Tos; Gripepin Limonada Caliente; Gripepin 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.