

- British Association for Emergency Medicine. Clinical Effectiveness Committee guideline for the management of pain in children (2004). Available at: http://www.emergencymed.org.uk/BAEM/CEC/assets/cec_pain_in_children.pdf (accessed 26/06/08)
- Marsh DF, et al. Opioid systems and the newborn. *Br J Anaesth* 1997; **79**: 787–95.
- Anonymous. Drugs in the management of acute diarrhoea in infants and young children. *Bull WHO* 1989; **67**: 94–6.
- Cimolai N, Carter JE. Antimotility agents for paediatric use. *Lancet* 1990; **336**: 874.

Administration in renal impairment. See under Precautions, above.

Cough. A systematic review¹ of over-the-counter preparations for acute cough concluded that codeine appeared no more effective than placebo in reducing cough symptoms in adults or children, although the number of patients in the studies considered was small.

See also Administration in Children, above.

- Smith SM, et al. Over-the-counter medications for acute cough in children and adults in ambulatory settings. Available in The Cochrane Database of Systematic Reviews; Issue 1. Chichester: John Wiley; 2008 (accessed 26/06/08).

Pain. Systematic reviews^{1,2} comparing paracetamol-codeine combinations versus paracetamol alone concluded that in single-dose studies addition of codeine to paracetamol produced a comparatively small but statistically significant increase in analgesic effect; however, there was an increased incidence of adverse effects with the combination.

- de Craen AJM, et al. Analgesic efficacy and safety of paracetamol-codeine combinations versus paracetamol alone: a systematic review. *BMJ* 1996; **313**: 321–5.
- Moore A, et al. Single dose paracetamol (acetaminophen), with and without codeine, for postoperative pain. Available in The Cochrane Database of Systematic Reviews; Issue 4. Chichester: John Wiley; 1998 (accessed 26/06/08).

Preparations

BP 2008: Co-codamol Capsules; Co-codamol Tablets; Co-codaprin Tablets; Codeine Linctus; Codeine Phosphate Injection; Codeine Phosphate Oral Solution; Codeine Phosphate Tablets; Dispersible Co-codaprin Tablets; Effervescent Co-codamol Tablets; Paediatric Codeine Linctus;
USP 31: Acetaminophen and Codeine Phosphate Capsules; Acetaminophen and Codeine Phosphate Oral Solution; Acetaminophen and Codeine Phosphate Oral Suspension; Acetaminophen and Codeine Phosphate Tablets; Aspirin and Codeine Phosphate Tablets; Bromodiphenhydramine Hydrochloride and Codeine Phosphate Oral Solution; Butalbital, Aspirin, Caffeine, and Codeine Phosphate Capsules; Carisoprodol, Aspirin, and Codeine Phosphate Tablets; Codeine Phosphate Injection; Codeine Phosphate Tablets; Codeine Sulfate Tablets; Guaifenesin and Codeine Phosphate Syrup; Terpin Hydrate and Codeine Elixir.

Proprietary Preparations (details are given in Part 3)

Austral.: Actacode; **Austria:** Codipertussin; Codipront Mono; Coditard; Makatusin-Hustentropfen; Tricodine; **Belg.:** Bromophar; Bronchodine; Bronchosedal; Eulyptan; Glucedat; Glottly; Toularynx; **Canad.:** Codeine Contin; **Fr.:** Codedril; Codenfan; Neo-Codion; Paderyl; **Ger.:** Antitussivum Burger; Bronchicum Mono Codein; codi OPT; Codicaps mono; Codicaps N; Codicaps Neo; Codicompen; Codipertussin; Codipront Mono; Makatusin Codein; Melrosium Codein Hustensirup; Neo-Codion NN; Optipect Kodein; Tryasol; Tussoret; **Gr.:** Codipront N; **Hong Kong:** Codipront N; **India:** Codifos; **Irl.:** Codant; Codinex; **Israel:** Codical; Rekod; **Malaysia:** Setinctus; **Neth.:** Bronchicum Extra Sterk; **Port.:** Toseina; **Rus.:** Neo-Codion (Нео-Кодион); **Spain:** Bisoltus; Codeisan; Codulin; Fludan Codeina; Histaverin; Notusin; Periduretas Codeina; Toseina; **Switz.:** Makatusin nouvelle formule; Tricodine; **UK:** Bepro; Galcodine; **Venez.:** Codipront Mono.

Multi-ingredient: numerous preparations are listed in Part 3.

Croton Oil

Aceite de croton; Oleum Crotonis; Oleum Tiglii.

CAS — 8001-28-3.

Pharmacopoeias. *Chin.* includes fruits of *Croton tiglium*.

Profile

Croton oil is an oil expressed from the seeds of *Croton tiglium* (Euphorbiaceae). Externally, it is a powerful counter-irritant and vesicant. Croton oil is also used with phenol in cosmetic chemical peeling of the skin.

Croton oil has such a violent purgative action that it should not be used as a laxative. Croton oil contains phorbol esters, which are carcinogenic.

Homeopathy. Croton has been used in homeopathic medicines under the following names: Croton tiglium; Croton tigr.

Preparations

Proprietary Preparations (details are given in Part 3)

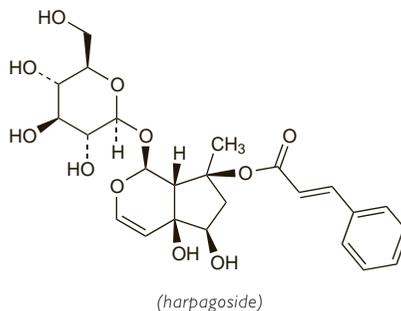
Multi-ingredient: *Canad.:* Rheumalan†.

Devil's Claw Root

Djävulsklorot; Harpagofytový kořen; Harpagonjuuri; Harpagophyti radix; Harpagophyton; Harpagophyton, racine d'; Harpagophytum; Inkaruočij šaknys; Ördögcsáklya gyökér; Raiz de harpagofito; Teufelskrallenwurzel.

CAS — 19210-12-9 (*harpagoside*).

The symbol † denotes a preparation no longer actively marketed



Pharmacopoeias. In *Eur.* (see p.vii), which also includes the dry extract.

Ph. Eur. 6.2 (Devil's Claw Root; Devil's Claw BP 2008). The cut and dried tuberos, secondary roots of *Harpagophytum procumbens* and/or *H. zeyheri*. Greyish-brown to dark brown with a bitter taste. Contains not less than 1.2% harpagoside ($C_{23}H_{30}O_{11} = 494.5$), calculated with reference to the dried drug. Protect from light.

Profile

Devil's claw root is used in herbal remedies for musculoskeletal and joint disorders. Its activity is attributed in part to the plant's content of iridoid glycosides, notably harpagoside.

Pain. Preparations containing devil's claw root have been tried with some success in the treatment of musculoskeletal disorders such as low back pain and osteoarthritis. There is some evidence of efficacy for daily doses standardised to 50 to 100 mg harpagoside but the quality of reporting in trials is generally poor and further studies are needed to establish its place in therapy.^{1,2}

- Gagnier JJ, et al. Harpagophytum [sic] procumbens for osteoarthritis and low back pain: a systematic review. *BMC Complement Altern Med* 2004; **4**: 13.
- Gagnier JJ, et al. Herbal medicine for low back pain. Available in The Cochrane Database of Systematic Reviews; Issue 2. Chichester: John Wiley; 2006 (accessed 05/10/06).

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Herbaccion Flex†; **Braz.:** Tenitrat; **Fr.:** Elusanes Harpagosic; Harpadol; Harpagocid; **Ger.:** Ajuta; Allya; Arthrosetten H; Arthrotabs; Bomarthros; Cefatec; Dolo-Arthrodynt†; Dolo-Arthrosetten H; Doloteflin; flexi-loges; Harpagoforte; HarpagoMega†; Harpagosan†; Herbadon†; Jucurba; Mata†; Pargo†; Rheufem Phyt; Rheuma-Sern; Rvoltan; Sogoon; Teltonal; Teufelskralle; **Pol.:** Reumaphyt; **Spain:** Fitokey Harpagophytum; Harpagofito Orto; **UK:** Atrosan; Flexiherb.

Multi-ingredient: **Austral.:** Arthriforte; Arthritic Pain Herbal Formula 1; Bioglan Arthri Plus; Boswellia Compound; Devils Claw Plus; Extralife Arthri-Care; Guaicum Complex†; Herbal Arthritis Formula†; Lifesystem Herbal Formula 1 Arthritic Aid†; Prost-1†; **Belg.:** Algi-Cool; **Cz.:** Antirematicky Caj; **Fr.:** Arkophytum†; **Ger.:** Dr Wiemanns Rheumatikum; **Ital.:** Bodyguard; Cartago; Flodolor; Nevril; Pfk Gel; Reumafort; **Malaysia:** Celery Plus†; **Mex.:** Rodan; **Pol.:** Reumaherb; **Spain:** Dolosul†; Natusor Harpagosinol†.

Dexibuprofen (BAN, USAN, rINN)

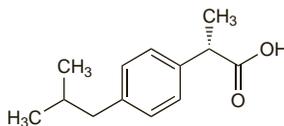
Deksiibuprofeni; Dexibuprofène; Dexibuprofeno; Dexibuprofenum; S-(+)-Ibuprofen.

Дексипрофен

CAS — 51146-56-6.

ATC — M01AE14.

ATC Vet — QM01AE14.



Profile

Dexibuprofen is the S(+)-enantiomer of ibuprofen (p.64) and is used similarly in the management of mild to moderate pain and inflammation in conditions such as dysmenorrhoea, headache, postoperative pain, dental pain, sprains, and soft-tissue rheumatism. It is also used in musculoskeletal and joint disorders such as ankylosing spondylitis, osteoarthritis, and rheumatoid arthritis. It may be used as an antipyretic to reduce fever.

The usual adult dose is 600 to 900 mg daily by mouth in up to 3 divided doses, adjusted according to response, to a usual maximum of 1.2 g daily. Elderly patients should be started at the lower end of the dose range; dosage may then be increased according to tolerance. Dose reductions are also recommended in patients with hepatic or renal impairment, see below.

For doses in children, see below.

◇ References.

- Phleps W. Overview on clinical data of dexibuprofen. *Clin Rheumatol* 2001; **20** (suppl 1): S15–S21.

- Mayrhofer F. Efficacy and long-term safety of dexibuprofen [S(+)-ibuprofen]; a short-term efficacy study in patients with osteoarthritis of the hip and a 1-year tolerability study in patients with rheumatic disorders. *Clin Rheumatol* 2001; **20** (suppl 1): S22–S29.
- Hawel R, et al. Comparison of the efficacy and tolerability of dexibuprofen and celecoxib in the treatment of osteoarthritis of the hip. *Int J Clin Pharmacol Ther* 2003; **41**: 153–64.

Administration in children. Although dexibuprofen is not licensed for use in children under 18 years of age in the UK, some countries permit such use. For example, in Switzerland, dexibuprofen has been given to children aged 6 years and over; usual oral doses are 10 to 15 mg/kg daily in 2 to 4 divided doses. Licensed product information for one preparation recommends a maximum dose of 300 mg daily for those weighing less than 30 kg.

Administration in hepatic and renal impairment. UK licensed product information specifies that the initial dose of dexibuprofen should be reduced in patients with mild to moderate hepatic or renal impairment; it should not be used in those with severe impairment.

Pharmacokinetics. For mention of the metabolism of dexibuprofen, see p.65.

Further references.

- Eller N, et al. Pharmacokinetics of dexibuprofen administered as 200 mg and 400 mg film-coated tablets in healthy volunteers. *Int J Clin Pharmacol Ther* 1998; **36**: 414–17.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Dextropirac†; Dolomin†; **Austria:** Actifen; Eu-Med Neur; Monactil; Movone; Seractil; **Chile:** Dixelle; **Cz.:** Seractil; **Denm.:** Seractil; **Fin.:** Dext-it; **Ger.:** Deltaran; **Gr.:** Seractil; **Hung.:** Seractil; **India:** Sibet; **Ital.:** Seractil; **Neth.:** Seractil; **Norw.:** Seractil; **Pol.:** Dexprofen; Seractil; **Port.:** Seractil; **Spain:** Atriscal; Seractil; **Swed.:** Tradil; **Switz.:** DexOptifen; Seractil; **UK:** Seractil.

Dextromoramide (BAN, pINN) ⊗

Dekstromoramid; Dextrodiphenopyrine; Dextromoramid; Dextromoramida; Dextromoramidum; d-Moramid; Pyrrolamidol. (+)-1-(3-Methyl-4-morpholino-2,2-diphenylbutyl)pyrrolidine.

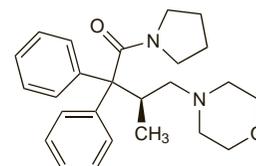
Декстроморами́д

$C_{25}H_{32}N_2O_2 = 392.5$

CAS — 357-56-2.

ATC — N02AC01.

ATC Vet — QN02AC01.



NOTE. The following terms have been used as 'street names' (see p.vi) or slang names for various forms of dextromoramide: Palf.

Dextromoramide Tartrate (BANM, pINNM) ⊗

Bitartrate de Dextromoramide; Dekstromoramidtartraatti; Dekstromoramid tartratas; Dextromoramide Acid Tartrate; Dextromoramide Hydrogen Tartrate; Dextromoramide, tartrate de; Dextromoramid tartras; Dextromoramid-tartarát; Dextromoramidtartrat; Tartrat de dextromoramida.

Декстроморами́да Тартрат

$C_{25}H_{32}N_2O_2 \cdot C_4H_6O_6 = 542.6$

CAS — 2922-44-3.

Pharmacopoeias. In *Eur.* (see p.vii).

Ph. Eur. 6.2 (Dextromoramide Tartrate). A white or almost white, crystalline or amorphous powder. Soluble in water; sparingly soluble in alcohol. A 1% solution in water has a pH of 3.0 to 4.0.

Profile

Dextromoramide is an opioid analgesic (p.104) structurally related to methadone (p.82). It has been used in the treatment of severe pain although it was not recommended for use in obstetric analgesia because of an increased risk of neonatal depression. Dextromoramide is subject to abuse.

Dextromoramide has been given orally as the tartrate. It has also been given rectally as suppositories and by subcutaneous or intramuscular injection.

Preparations

BP 2008: Dextromoramide Tablets.

Proprietary Preparations (details are given in Part 3)

Irl.: Palfium; **Neth.:** Palface; Palfium.

The symbol ⊗ denotes a substance whose use may be restricted in certain sports (see p.vii)