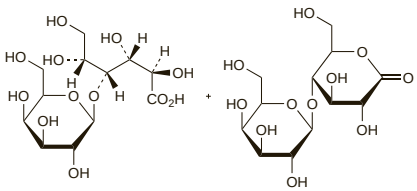
Dermacyd; Dermafree; Duofilm; Kalostop†; Lacticare; Lacto Vagin†; Salic; ***Canad.:*** Duofilm; Duoplant; Epi-Lyt; P & S; Penederm†; Viron Wart Lotion; ***Chile:*** Akerat; Cuidado Intimo; Duofilm; Eucerin Piel Grasa; Lactacyd; Lacticare†; Node DS; Primacy C+AHA†; Ureadin 30; ***Cz.:*** Acne Lotio†; Duofilm; ***Denm.:*** Verucid; ***Fin.:*** Calmuril; Wicnelact; ***Fr.:*** Akerat; Cleanance K; Contragel Vert; Correcteur Anti-Taches; Duofilm; Geliofil; Keracnyl; Kerafilm; Lactacyd Derma; Lactacyd Femina; Lacticare; Pedi-Relax Anti-callosites†; Propy-Lacticare; Saugella; Sebium AKN; Topic 10; Verrufilm; Verrupan; ***Ger.:*** Akaderm N; Calmurid†; Clabin; Collomack†; Duofilm; Gehwol Huhneraugen Pflaster†; Sagrosept†; Solco-Derman; Vagisan; W-Tropfen; Warzen-Alldahin†; ***Gr.:*** Duofilm; ***Hong Kong:*** Collomack; Dermadrate; Dermatech Wart Treatment; Duofilm; Eubos Feminin; Lactacyd; Lacticare†; Solcoderm; Verrufilm; ***Hung.:*** Duofilm; ***India:*** Cotaryl; Lacgel; ***Indon.:*** Exfoliac; Lactacyd; Lacticare; ***Irl.:*** Calmurid; Calmurid HC; Cuplex; Duofilm; Lacticare; Salactol; Salatac; ***Israel:*** Babyzim; Calmurid; Calmurid HC†; Salatac; U-Lactin Foot Cream; U-Lactin Forte; ***Ital.:*** Bruciaporri; Decon Lavanda; Duofilm; Eudermico†; Gastro-Pepsin; Geliofil; Geroderm Zolfo†; Ginil; Ipso Urea; Kerafilmver; Lactacyd Derma; Lactacyd Intimo; Lactocol; Saugella Salviettine; Sensigel; Sensiquell; Triacid; Unidermo; Verel; Verunec; ***Malaysia:*** Collomack†; Duofilm; Lactacyd; Lacticare; Lorasil Feminine Hygeine†; Solcoderm†; ***Mex.:*** Duofilm; Kinor; Lacticare; Rug-Derm; Urader Lactato; ***Neth.:*** Calmurid; Calmurid HC; Duofilm; ***Norw.:*** Verucid; ***NZ:*** Calmurid†; Dermadrate; Duofilm; ***Philipp.:*** Duofilm; Intima; Lactacyd; Lacticare; ***Pol.:*** ABE-Plyn; Acerin; Brodacid; Duofilm; Masc na Odciski; ***Port.:*** Atopic†; Bioclin Sebo Care; Calicida Indiano; Calmurid; Creme Laser Hidrante; Despigmentante; Duofilm†; Halitol†; Lactacyd†; Lecia†; Pansebase; Pansebase Composto; Secpel; Secpel Composto; Ureadin Maos; Verrucare; ***Rus.:*** Solcoderm (Солкодерм); ***S.Afr.:*** Duofilm; Kroko; Lacticare; ***Singapore:*** Collomack†; Dermadrate; Dermatech Wart Treatment; Duofilm; Lactacyd; Lacticare; U-Lactin; ***Spain:*** Antiverrugas; Callicida Cor Pik; Callix; Euzymina Lisina I; Ginejuvent; Keranin; Roidhemo†; Unguento Callicida Naion; Verufil; ***Switz.:*** Calmurid; Calmurid HC†; Clabin; Coruzol†; Duofilm; Solcoderm; Va-t'en; Vin Tonique de Vial†; Waruzol; Warz-ab Extor; ***Thai.:*** Collomack†; Duofilm; Lactacyd; Lacticare; ***Turk.:*** Duoderm; ***UK:*** Bazuka; Calmurid; Calmurid HC; Cuplex; Duofilm; Lacticare†; Salactol; Salatac; ***USA:*** AmLactin AP; Epi-Lyt; Lacticare; Lactinol-E; SLT†; ***Venez.:*** Akerat; Collomack; Duofilm†; Kayivis.

Lactobionic Acid

Acide Lactobionique; Acidum lactobionicum; Kwas laktobionowy; Kyselina laktobionová; Laktobionihappo; Laktobiono rūgštis; Laktobionsyra.

CAS — 96-82-2 (4-O-β-D-galactopyranosyl-D-gluconic acid).



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

Ph. Eur. 6.2 (Lactobionic Acid). A mixture in variable proportions of 4-*O*-β-D-galactopyranosyl-D-gluconic acid ($C_{12}H_{22}O_{12}$ = 358.3) and 4-*O*-β-D-galactopyranosyl-D-glucono-1,5-lactone ($C_{12}H_{20}O_{11}$ = 340.3). A white or almost white powder. Freely soluble in water; slightly soluble in anhydrous ethanol, methyl alcohol, and glacial acetic acid.

Profile

Lactobionic acid is used to form water-soluble salts of drugs such as calcium and the macrolide antibacterials clarithromycin and erythromycin. It is present, in the form of potassium lactobionate, in preservation fluids such as UW (University of Wisconsin) solution for organ transplantation; the lactobionate anion acts as an impermeant and provides an osmotic force to oppose cellular oedema in the stored organ. Lactobionic acid has similar properties to gluconic acid (p.2313) and is being tried in skin care products.

Lactoferrin

Lactotransferrin; rhLF (talactoferrin alfa).

CAS — 308240-58-6 (talactoferrin alfa).

Profile

Lactoferrin is an iron-binding protein found in milk, saliva, and other exocrine secretions. It has antimicrobial actions and has been used in preparations for the management of dry mouth (p.2140) and other mouth disorders.

Lactoferrin and other whey proteins have also been used as nutritional supplements. Recombinant forms of lactoferrin such as talactoferrin alfa are under investigation.

◊ Reviews.

1. Marshall K. Therapeutic applications of whey protein. *Altern Med Rev* 2004; **9:** 136–56.
2. Valenti P, *et al*. Lactoferrin functions: current status and perspectives. *J Clin Gastroenterol* 2004; **38** (suppl 2): S127–S129.

Preparations

Proprietary Preparations (details are given in Part 3)
Austral.: Immune Boost; ImmunoDefence; ***Ital.:*** Endvir Simplex.

Multi-ingredient: ***Indon.:*** Laktobion; ***Ital.:*** Liverton; Nepiros; Rivuclin; ***Singapore:*** Biotene; ***UK:*** Biotene Dry Mouth; BioXtra†; ***USA:*** Biotene with Calcium.

Lactoperoxidase

CAS — 9003-99-0.

Profile

Lactoperoxidase is a peroxidase enzyme that is present in milk and saliva. It reacts with hydrogen peroxide and thiocyanate to produce an antibacterial effect and has been used in preparations for the management of dry mouth (p.2140) and other mouth disorders. It has also been used for its preservative action in cosmetics and skin-care products.

In the lactoperoxidase system for milk preservation, sodium thiocyanate and sodium percarbonate (a source of hydrogen peroxide) are added to fresh bovine milk to activate the lactoperoxidase it contains.

◊ Reviews.

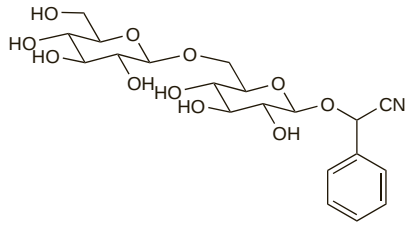
1. Kussendrager KD, van Hooijdonk AC. Lactoperoxidase: physico-chemical properties, occurrence, mechanism of action and applications. *Br J Nutr* 2000; **84** (suppl 1): S19–S25.
2. Tenovuo J. Clinical applications of antimicrobial host proteins lactoperoxidase, lysozyme and lactoferrin in xerostomia: efficacy and safety. *Oral Dis* 2002; **8:** 23–9.
3. Lönnerdal B. Nutritional and physiologic significance of human milk proteins. *Am J Clin Nutr* 2003; **77** (suppl): 1537S–1543S.

Preparations

Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***Singapore:*** Biotene; ***UK:*** Biotene Dry Mouth; Biotene Oralbalance; BioXtra†; ***USA:*** Biotene with Calcium.

Laetrile

CAS — 1332-94-1 (laetrile); 29883-15-6 (amygdalin).



(amygdalin)

Profile

Laetrile is the term used for a product consisting chiefly of amygdalin, which is the major cyanogenic glycoside of apricot kernels. Amygdalin is *R*-α-cyanobenzyl-6-*O*-β-D-glucopyranosyl-β-D-glucopyranoside ($C_{20}H_{27}NO_{11}$ = 457.4). Laetrile is also used as a term for *R*-α-cyanobenzyl-6-*O*-β-D-glucopyranosiduronic acid ($C_{14}H_{15}NO_7$ = 309.3).

Laetrile was claimed to be preferentially hydrolysed in cancer cells by β-glucosidases to benzaldehyde and hydrogen cyanide, which killed the cell, but amygdalin does not appear to be absorbed from the gastrointestinal tract, and both normal and malignant cells contain only traces of β-glucosidases. Laetrile has also been claimed to be 'vitamin B_{17}', the deficiency of which is said to result in cancer; there is no evidence for this view and laetrile is of no known value in human nutrition.

There have been several reports of cyanide poisoning and other adverse reactions associated with the use of laetrile, especially when taken orally.

◊ A systematic review[1] concluded that data from controlled studies do not support the claims of efficacy for laetrile in cancer patients. Further references[2-4] to laetrile, including case reports[3,4] of toxic effects.

1. Milazzo S, *et al*. Laetrile treatment for cancer. Available in The Cochrane Database of Systematic Reviews; Issue 2. Chichester: John Wiley; 2006 (accessed 17/07/08).
2. Chandler RF, *et al*. Controversial laetrile. *Pharm J* 1984; **232:** 330–2.
3. Bromley J, *et al*. Life-threatening interaction between complementary medicines: cyanide toxicity following ingestion of amygdalin and vitamin C. *Ann Pharmacother* 2005; **39:** 1566–9.
4. O'Brien B, *et al*. Severe cyanide toxicity from 'vitamin supplements'. *Eur J Emerg Med* 2005; **12:** 257–8.

Laminaria

Stipites Laminariae; Styli Laminariae; Thallus Eckloniae; Thallus Laminariae.

Pharmacopoeias. In *Chin.*

Profile

Laminaria is the dried stalks of the seaweeds *Laminaria japonica*, *L. digitata*, and possibly other species of *Laminaria*. The stalks swell in water to about 6 times their volume and have been used surgically to dilate cavities and to dilate the cervix in labour or abortion induction.

An extract of various species of *Laminaria* has been used as a dietary supplement (see Seaweeds, Kelps, and Wracks, p.2384).

Adverse effects. Anaphylaxis[1-3] and toxic shock syndrome[4] have been reported after the insertion of laminaria for cervical dilatation.

1. Nguyen MT, Hoffman DR. Anaphylaxis to laminaria. *J Allergy Clin Immunol* 1995; **95:** 138–9.
2. Cole DS, Bruck LR. Anaphylaxis after laminaria insertion. *Obstet Gynecol* 2000; **95:** 1025.
3. Chanda M, *et al*. Hypersensitivity reactions following laminaria placement. *Contraception* 2000; **62:** 105–6.
4. Sutkin G, *et al*. Toxic shock syndrome after laminaria insertion. *Obstet Gynecol* 2001; **98:** 959–61.

Preparations

Proprietary Preparations (details are given in Part 3)
Rus.: Okovidit (Оковидит).

Multi-ingredient: ***Fr.:*** Marinol; ***Spain:*** Fucusor†.

Lappa

Bardana; Bardanae Radix; Bardane (Grande); Burdock; Burdock Root; Lappa Root.

Pharmacopoeias. In *Fr.*
Chin. and *Jpn* include the fruits.

Profile

Lappa is the dried root of the great burdock, *Arctium lappa* (*A. majus*), and other species of *Arctium* (Compositae). It was formerly used in the form of a decoction as a diuretic and diaphoretic but there is little evidence of its efficacy. Herbal preparations containing lappa have been used in the treatment of skin, musculoskeletal, and gastrointestinal disorders. The leaves and fruits of *Arctium* spp. have also been used.

Homoeopathy. Lappa has been used in homoeopathic medicines under the following names: Lappa major; Lap. maj.

Preparations

Proprietary Preparations (details are given in Part 3)
Mex.: Saforelle†; ***Port.:*** Saforelle; ***Venez.:*** Saforelle.

Multi-ingredient: ***Austral.:*** Acne Oral Spray†; Dermaco; Herbal Cleanse†; Percutane; Trifolium Complex†; ***Canad.:*** Herbal Laxative; Natural HRT; ***Cz.:*** Diabetan; ***Fr.:*** Arbum; Depuratif Parnel; Fitacnol†; Zeniac LP†; Zeniac†; ***Ital.:*** Allerlux; ***Malaysia:*** Celery Plus†; Cleansa Plus†; Dandelion Complex†; ***Pol.:*** Betasol; Immunofort; Seboren; ***S.Afr.:*** Lotio Pruni Comp cum Cupro; ***Spain:*** Diabesor†; ***UK:*** Aqua Ban Herbal; Backache; Cascade; Catarrh Mixture; GB Tablets; Gerard House Skin; Gerard House Water Relief Tablets; HRI Clear Complexion; Modern Herbals Water Retention; Rheumatic Pain Remedy; Skin Cleansing; Skin Eruptions Mixture; Tabritis; Water Naturtabs.

Laronidase *(USAN, rINN)*

Alpha-L-iduronidase; Alronidase; Laronidasa; Laronidasum; Laronidaz. 8-L-Histidine-α-L-iduronidase (human).

Ларонидаз

CAS — 210589-09-6.
ATC — A16AB05.
ATC Vet — QA16AB05.

Adverse Effects, Treatment, and Precautions

Anaphylactic and other infusion reactions, sometimes delayed in onset, have been reported in patients given laronidase and facilities for resuscitation should be available whenever laronidase is used. Common symptoms include flushing, fever, headache, and rash; bronchospasm has also been reported. Other adverse effects commonly reported include abdominal pain, arthralgia, back pain, nausea, vomiting, diarrhoea, cough, dyspnoea, urticaria, angioedema, pruritus, chills, paraesthesia, dizziness, tachycardia, increased blood pressure, and decreased oxygen saturation. Patients with existing respiratory disease may be at risk of more severe reactions. Antihistamines and/or antipyretics (e.g. paracetamol or ibuprofen) may relieve symptoms. A reduction in the rate of infusion to half the rate at which the reaction occurred should also be considered for mild or moderate reactions; for severe reactions, the infusion should be stopped until symptoms have subsided, and then restarted at one-half to one-quarter the rate at which the reaction occurred. Adrenaline should be used with caution because there is a greater incidence of coronary artery disease in patients with mucopolysaccharidosis I. Pre-treatment with antihistamines and/or antipyretics about 60 minutes before infusion is recommended to prevent reactions. IgG antibodies to laronidase are expected to develop within 3 months of starting treatment in the majority of patients, although the effect of this on safety and efficacy is not clear. However, such patients may be at increased risk of hypersensitivity reactions and should be treated with caution. Injection site reactions have also been reported.

Interactions

Licensed product information for laronidase recommends that it should not be given with chloroquine or procaine because of the potential risk of interference with the intracellular uptake of the enzyme.

Uses and Administration

Laronidase is recombinant human α-L-iduronidase and is used as enzyme replacement therapy for the treatment of the non-neurological manifestations of mucopolysaccharidosis I (see below). It is given by intravenous infusion in a dose of 100 units/kg each week. The initial infusion rate should be 2 units/kg per hour,

increased every 15 minutes during the first hour, as tolerated, to a maximum of 43 units/kg per hour such that the infusion is completed in about 3 to 4 hours (but see also under Adverse Effects, Treatment, and Precautions, above). In some countries, the dose is expressed as mg/kg: 100 units is equivalent to about 580 micrograms of laronidase.

Mucopolysaccharidosis I. Mucopolysaccharidosis I is a progressive disorder characterised by deficiency of the enzyme α-L-iduronidase, which is necessary to catalyse the hydrolysis of terminal α-L-iduronic residues of the glycosaminoglycans, dermatan sulfate and heparan sulfate. This results in their accumulation in tissues, with many clinical manifestations including hepatomegaly, skeletal abnormalities, pulmonary disease, eye disease, and progressive deterioration of the CNS. Mucopolysaccharidosis I has traditionally been classified into three main forms based on clinical symptoms and severity: Hurler syndrome, Hurler-Scheie syndrome, and Scheie syndrome. Hurler syndrome is the most severe form with a life expectancy of less than 10 years. However, there is a degree of overlap between the syndromes and they are indistinguishable by routine enzyme or urine tests.

Treatment was previously limited to symptomatic management but other options to halt disease progression are now available. Haematopoietic stem-cell transplantation using bone marrow or umbilical cord blood is of benefit in systemic disease and can prevent (but not usually reverse) CNS deterioration. However, substantial adverse effects limit its use to patients with severe disease. Enzyme replacement therapy with laronidase has been reported to confer benefit on the systemic manifestations of the disease, but since it does not cross the blood-brain barrier in appreciable amounts, beneficial effect on CNS symptoms is again predicted to be unlikely. However, the improvements conferred by enzyme replacement therapy might make haematopoietic stem-cell transplantation easier to tolerate.

References.

1. Kakkis ED, *et al.* Enzyme-replacement therapy in mucopolysaccharidosis I. *N Engl J Med* 2001; **344:** 182–8.
2. Wraith JE. Enzyme replacement therapy in mucopolysaccharidosis type I: progress and emerging difficulties. *J Inherit Metab Dis* 2001; **24:** 245–50.
3. Kakkis ED. Enzyme replacement therapy for the mucopolysaccharide storage disorders. *Expert Opin Invest Drugs* 2002; **11:** 675–85.
4. Kakavanos R, *et al.* Immune tolerance after long-term enzyme-replacement therapy among patients who have mucopolysaccharidosis I. *Lancet* 2003; **361:** 1608–13.
5. Muenzer J, Fisher A. Advances in the treatment of mucopolysaccharidosis type I. *N Engl J Med* 2004; **350:** 1932–4.
6. Staba SL, *et al.* Cord-blood transplants from unrelated donors in patients with Hurler's syndrome. *N Engl J Med* 2004; **350:** 1960–9.
7. Wraith JE, *et al.* Enzyme replacement therapy for mucopolysaccharidosis I: a randomized, double-blinded, placebo-controlled, multinational study of recombinant human α-L-iduronidase (laronidase). *J Pediatr* 2004; **144:** 581–8.
8. Grewal SS, *et al.* Safety and efficacy of enzyme replacement therapy in combination with hematopoietic stem cell transplantation in Hurler syndrome. *Genet Med* 2005: **7:** 143–6.
9. Miebach E. Enzyme replacement therapy in mucopolysaccharidosis type I. *Acta Paediatr Suppl* 2005; **94** (suppl 447): 58–60.
10. Wraith JE, *et al.* Enzyme replacement therapy in patients who have mucopolysaccharidosis I and are younger than 5 years: results of a multinational study of recombinant human α- -iduronidase (laronidase). Abstract: *Pediatrics* 2007; **120:** 158. Full version: http://pediatrics.aappublications.org/cgi/reprint/120/1/e37 (accessed 07/02/08)

Preparations

Proprietary Preparations (details are given in Part 3)

Belg.: Aldurazyme; ***Canad.:*** Aldurazyme; ***Cz.:*** Aldurazyme; ***Denm.:*** Aldurazyme; ***Fin.:*** Aldurazyme; ***Fr.:*** Aldurazyme; ***Ger.:*** Aldurazyme; ***Israel:*** Aldurazyme; ***Ital.:*** Aldurazyme; ***Neth.:*** Aldurazyme; ***Norw.:*** Aldurazyme; ***NZ:*** Aldurazyme; ***Pol.:*** Aldurazyme; ***Spain:*** Aldurazyme; ***Swed.:*** Aldurazyme; ***UK:*** Aldurazyme; ***USA:*** Aldurazyme.

Lavender

English Lavender; Kwiat lawendy (lavender flower); Lavande, fleur de (lavender flower); Lavande Vrai; Lavandulae flos (lavender flower); Lavendelblomma (lavender flower); Lavendelblüten; Laventelinkukka (lavender flower); Levandų žiedai (lavender flower); Levandulový květ (lavender flower); Levendulavirág (lavender flower).

Pharmacopoeias. *Eur.* (see p.vii) includes lavender flower.
Ph. Eur. 6.2 (Lavender Flower; Lavandulae flos). It consists of the dried flower of *Lavandula angustifolia* (*L. officinalis*). It contains not less than 1.3% v/w of essential oil, calculated with reference to the anhydrous drug. Protect from light.

Profile

Lavender flower is used as a sedative. It has also been used as a cholagogue. It is an ingredient of herbal remedies used for a variety of disorders.

Lavender flowers are the source of lavender oil (below).

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: ***Arg.:*** Lavandula Oligoplex; ***Austral.:*** Cimicifuga Compound; ***Austria:*** Euka; Mentopin; ***Braz.:*** Balsamo Branco; Traumac; ***Cz.:*** Melaton†; Schlaf-Nerventee N†; Valofyt Neo; ***Fr.:*** Mediflor Tisane Digestive No 3; ***Ger.:*** Presselin Dyspeptikum†; ***NZ:*** Botanica Hayfever; ***Pol.:*** Lumewal; Nervinolum; Nervosol; Reumobonisol; ***Port.:*** Cholagutt†; Erpecalm; ***S.Afr.:*** Krampdruppels; ***Spain:*** Linimento Naion; ***Switz.:*** Tisane relaxante N†; ***UK:*** Vital Eyes.

Lavender Oil

English Lavender Oil (from *L. intermedia*); Esencia de Alhucema; Esencia de Espliego; Essência de Alfazema; Foreign Lavender Oil (from *L. officinalis*); Huile Essentielle de Lavande; Lavanda, aceite esencial de; Lavande, huile essentielle de; Lavandulae aetheroleum; Lavandulae Etheroleum; Lavanta Yağı; Lavendelöl; Lavendelolja; Lavender Flower Oil; Laventeliöljy; Levandų eterinis aliejus; Levandulová silice; Olejek lawendowy; Oleum Lavandulae.

Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Lavender Oil). An essential oil obtained by steam distillation from the flowering tops of *Lavandula angustifolia* (*L. officinalis*). A colourless or pale yellow clear liquid with a characteristic odour. Relative density 0.878 to 0.892. Store in well-filled airtight containers at a temperature not exceeding 25°. Protect from light.

Profile

Lavender oil has been used as a carminative and as a flavour. It is sometimes applied externally as an insect repellent. Its chief use is in perfumery and it is occasionally used in ointments and other pharmaceutical preparations to cover disagreeable odours. It has been suggested that lavender oil may have sedative properties after inhalation. It is also used in aromatherapy.

Lavender oil has been reported to produce nausea, vomiting, headache, and chills when inhaled or absorbed through the skin. It may cause contact allergy and phototoxicity.

Adverse effects. There have been reports of contact dermatitis associated with lavender oil in a shampoo,[1] and facial dermatitis after application of the oil to pillows for its sedative properties.[2]

1. Brandão FM. Occupational allergy to lavender oil. *Contact Dermatitis* 1986; **15:** 249–50.
2. Coulson IH, Khan ASA. Facial 'pillow' dermatitis due to lavender oil allergy. *Contact Dermatitis* 1999; **41:** 111.

Insomnia. Ambient exposure to lavender oil produced similar sleep patterns to conventional sedatives in 4 elderly patients.[1]

1. Hardy M, *et al.* Replacement of drug treatment for insomnia by ambient odour. *Lancet* 1995; **346:** 701.

Preparations

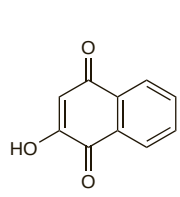
Proprietary Preparations (details are given in Part 3)

Pol.: Lawenol.

Multi-ingredient: ***Austral.:*** Apex Repel Natural; Neutralice; ***Austria:*** Berggeist; Rowalind; ***Belg.:*** Mouskito Travel Milk; ***Braz.:*** Aliviol; Analgen†; Benegel; Gelflex; Gelol†; Gelonevral†; Inhalante Yatropan; Mentalol†; Mialgex†; Nevrol; Salimetin†; ***Cz.:*** Amol; Ondrejova Mast; Tiger Ol†; ***Fr.:*** Aromasol; Balsofumine; Balsofumine Mentholee; Ephydrol; Gouttes aux Essences; Maghora; Moustidose; Moustidose Bebe-Nourrisson; Paps; Pectoderme†; Perubore; Poudre du Marcheur; Resistim; ***Ger.:*** Amol Heilkrautergeist N; Dolo-cyl; Leber-Galle-Tropfen 83†; Solum Ol; ***Hong Kong:*** Calmiderm; ***Hung.:*** Opodeldok†; ***Israel:*** Headache Pads; ***Ital.:*** Citrosystem; Controller; Mistick Verde; Venalta; Vicks Baby Balsam†; ***NZ:*** Apex Repel Natural; Electric Blue Headlice; Vicks Baby Balsam; ***Pol.:*** Amol; Aromatol; Carmolis; ***Port.:*** Solubeol†; Vaporil; ***Rus.:*** Carmolis (Кармолис)†; Carmolis Fluid (Кармолис Жидкость)†; Espol (Эспол); ***S.Afr.:*** Arnica Massage Oil; Entressdruppels HM; Rooilavental; ***Spain:*** Dolokey; Termosan; ***Switz.:*** Baume du Chalet; Carmol; Dolo-Arthrosenex sine Heparino†; Hygiodermil; Liberol Bain†; Massorax†; Muco-Sana†; Nasobol†; Oculosan; Perskindol Classic; Perubare†; Pommade Nasale Radix†; Pulmex; Saltrates†; Spagyrom; Ziegella; ***Turk.:*** Algo-Wax; ***UK:*** Arnica Massage Balm; Eucanol; Larch Resin comp.; Massage Balm with Calendula; Migrastick; ***USA:*** Nasal Jelly; ***Venez.:*** Friccion Aromatica.

Lawsone

Lawsonia. 2-Hydroxy-1,4-naphthoquinone.
$C_{10}H_6O_3$ = 174.2.
CAS — 83-72-7.



Profile

Lawsone is a dye present in henna (p.2318), the leaves of *Lawsonia* spp., and may also be prepared synthetically. It has been used with dihydroxyacetone in sunscreen preparations. There appears to be no evidence that it has any sunscreening properties when used alone.

Adverse effects. Observation that lawsone causes oxidative damage to red blood cells *in vitro* supported a suggestion that percutaneous absorption of henna could contribute to unexplained neonatal hyperbilirubinaemia in countries where the ceremonial use of henna is widespread.[1]

1. Zinkham WH, Oski FA. Henna: a potential cause of oxidative hemolysis and neonatal hyperbilirubinemia. *Pediatrics* 1996; **97:** 707–9.

Lead

Blei; Plomb; Plomo; Plumbum.
Pb = 207.2.
CAS — 7439-92-1.

Description. Lead is a grey, malleable and ductile metal.

Adverse Effects

Lead poisoning (plumbism) may be due to inorganic or organic lead and may be acute or, more often, chronic. It has followed exposure to a wide range of compounds and objects from which lead may be absorbed following ingestion or inhalation. Some of those that have been incriminated include paint, pottery glazes, crystal glassware, domestic water supplies, petrol, poteen, cosmetics (particularly home-made or traditional forms such as kohl or surma), herbal or folk remedies, including traditional Chinese medicines, newsprint, and retained bullets. Children are often the victims of accidental poisoning and may be vulnerable to chronic exposure to lead from environmental pollution.

Acute effects of lead poisoning include metallic taste, abdominal pain, diarrhoea, vomiting, hypotension, muscle weakness and cramps, fatigue, abnormal liver function tests, and acute interstitial nephritis. Encephalopathy may occur and is more common in children. Symptoms of chronic poisoning with inorganic lead include anorexia, abdominal pain, constipation, anaemia, headache, fatigue, irritability, peripheral neuropathy, and encephalopathy with convulsions and coma. There may be kidney damage and impairment of mental function. Children with elevated lead concentrations may be asymptomatic apart from intellectual deficits and behavioural disorders.

Organic lead poisoning produces mainly CNS symptoms; there can be gastrointestinal and cardiovascular effects, and renal and hepatic damage.

◊ General references to lead exposure, adverse effects, screening, and management,[1-15] and case reports of specific sources of lead exposure.[16-21]

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