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Canola Oil

Canola, aceite de.

CAS — 120962-03-0.

Profile

Canola oil is a form of rapeseed oil (p.2378) from strains selected for low erucic acid content. It is used as an edible oil and in pharmaceutical manufacturing and cosmetics.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: NZ: Mr Nits.

Cantharides

Blistering Beetle; Cantáridas; Cantharis; Insectes Coléoptères Hétéromères; Lytta; Méloïdes; Russian Flies; Spanish Fly. Шпанские Мушки

Adverse Effects

The adverse effects of cantharides are those of its active component, cantharidin, below.

Uses and Administration

Cantharides is the dried beetle *Cantharis vesicatoria* (*Lytta vesicatoria*) (Meloidae) or other spp., containing not less than 0.6% of cantharidin, which is a protective exudate produced by the beetles. The properties of cantharides are those of its active principle, cantharidin (below).

Mylabris (Chinese blistering beetle; Chinese cantharides; Indian blistering beetle), the dried beetle of the species *Mylabris sidae* (= *M. phalerata*), *M. cichorii*, and *M. pustulator*, has been used as a substitute for cantharides and as a source of cantharidin (see below) in the East.

Homeopathy. Cantharides has been used in homeopathic medicines under the following names: Cantharis; Lytta vesicatoria; Canth.

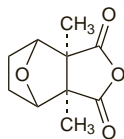
Cantharidin

Cantharidina. Hexahydro-3aa,7aa-dimethyl-4β,7β-epoxyisobenzofuran-1,3-dione.

Кантаридин

C₁₀H₁₂O₄ = 196.2.

CAS — 56-25-7.



Adverse Effects and Treatment

The adverse effects of cantharidin, a protective exudate produced by blistering beetles (see under Cantharides above), are a result of its irritant and vesicant properties and may occur after exposure to preparations of cantharidin or to the beetle itself. Cantharidin produces blistering of mucous membranes. After ingestion of cantharidin there is burning pain in the throat and stomach, difficulty in swallowing, nausea, vomiting, haematemesis, abdominal pain, diarrhoea (sometimes bloody), tenesmus, renal pain, frequent micturition, dysuria, priapism, haematuria, proteinuria, renal failure, severe hypotension, and circulatory failure. Severe gastrointestinal disturbances can produce significant morbidity. Oral doses of cantharidin ranging from 10 to 80 mg have been lethal, although there have been reports of survival after doses up to 175 mg. Cantharidin is lipid soluble and oral bioavailability is increased in the presence of fatty substances.

Dermatological exposure may produce dermatitis, blisters, and ulceration, although symptoms may not appear until several hours later. Significant dermal exposure can give rise to systemic toxicity. Keratoconjunctivitis, iritis, and oedema may result from contact with the eyes or surrounding tissues.

Cantharidin has been abused as a sex stimulant.

Treatment of cantharidin poisoning is largely supportive. Emesis must be avoided following oral ingestion because of the severe irritant effect of cantharidin on mucous membranes. Activated charcoal has been tried, although it is not certain whether it binds to cantharidin.

Poisoning. References.

- Hundt HKL, et al. Post-mortem serum concentration of cantharidin in a fatal case of cantharides poisoning. *Hum Exp Toxicol* 1990; **9**: 35–40.
- Poletini A, et al. A fatal case of poisoning with cantharidin. *Forensic Sci Int* 1992; **56**: 37–43.
- Karras DJ, et al. Poisoning from "Spanish fly" (cantharidin). *Am J Emerg Med* 1996; **14**: 478–83.
- Tagwireyi D, et al. Cantharidin poisoning due to "Blister beetle" ingestion. *Toxicol* 2000; **38**: 1865–9.

Uses and Administration

Cantharidin is obtained from cantharides or mylabris (see under Cantharides, above). Cantharidin has vesicant activity and a solution of 0.7% in flexible collodion is applied for the removal of warts and molluscum contagiosum. Preparations of cantharides and cantharidin have also been used externally as rubefacients and counter-irritants. Owing to the intensely irritating nature of cantharidin it should not be taken internally. Also it should not be applied over large surfaces because of the risk of absorption.

Preparations of cantharides and cantharidin were formerly promoted for hair loss but their use in cosmetic products is now prohibited in the UK by law.

Molluscum contagiosum. References.

- Silverberg NB, et al. Childhood molluscum contagiosum: experience with cantharidin therapy in 300 patients. *J Am Acad Dermatol* 2000; **43**: 503–7.
- Moed L, et al. Cantharidin revisited: a blistering defense of an ancient medicine. *Arch Dermatol* 2001; **137**: 1357–60.
- Ross GL, Orchard DC. Combination topical treatment of molluscum contagiosum with cantharidin and imiquimod 5% in children: a case series of 16 patients. *Australas J Dermatol* 2004; **45**: 100–2.
- Hanna D, et al. A prospective randomized trial comparing the efficacy and adverse effects of four recognized treatments of molluscum contagiosum in children. *Pediatr Dermatol* 2006; **23**: 574–9.

Preparations

Proprietary Preparations (details are given in Part 3)

Canad.: Canthacur; Cantharone.

Multi-ingredient: Canad.: Canthacur-PS; Cantharone Plus.

Capsicum

Capsici; Capsici fructus; Chillies; Espanjanpippuri; Paprikový plod; Papriky vaisiai; Piment de cayenne; Piment Rouge; Pimentão; Red Pepper; Spanischer Pfeffer; Spansk peppar.

NOTE. Ground cayenne pepper of commerce is normally a blend of varieties of capsicum. Paprika is from *Capsicum annuum* var. *longum*; it is milder than capsicum.

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

Eur. and *US* also include capsicum oleoresin (capsicin).

Ph. Eur. 6.2 (Capsicum). The dried ripe fruits of *Capsicum annuum* var. *minimum* and small-fruited varieties of *C. frutescens*. It contains a minimum of 0.4% of total capsaicinoids expressed as capsaicin, calculated with reference to the dried drug. Protect from light.

Ph. Eur. 6.2 (Capsicum Oleoresin, Refined and Quantified). A red or brown mobile extract that contains 6.5 to 8.0% of capsaicinoids expressed as capsaicin. It is produced from the herbal drug and alcohol or methyl alcohol by an appropriate procedure.

USP 31 (Capsicum). The dried ripe fruits of *Capsicum frutescens*, known in commerce as African Chillies, or of *C. annuum* var. *comoides*, known in commerce as Tabasco Pepper, or *C. annuum* var. *longum*, known in commerce as Louisiana Long Pepper, or of a hybrid between the Honka variety of Japanese Capsicum and the Old Louisiana Sport Capsicum, known in commerce as Louisiana Sport Pepper.

USP 31 (Capsicum Oleoresin). An alcoholic extract of the dried ripe fruits of *Capsicum annuum* var. *minimum* and small fruited varieties of *C. frutescens* (Solanaceae). It contains not less than 8% of total capsaicins. It is a dark red oily liquid. Soluble in alcohol, in acetone, in chloroform, in ether, and in volatile oils; soluble with opalescence in fixed oils. Store in airtight containers.

Profile

Capsicum has a carminative action but it is mainly used externally, often in the form of capsicum oleoresin, as a counter-irritant (see Rubefacients and Topical Analgesia, p.5). It is also included in preparations for the management of cough and cold symptoms. However, preparations of capsicum and capsicum oleoresin can be very irritant. Capsaicin (p.32), the active ingredient of capsicum, is also used in topical preparations in the treatment of painful skin conditions.

Capsicum oleoresin is used in 'pepper sprays' for law enforcement and self defence.

Capsicum also has culinary uses.

Homeopathy. Capsicum has been used in homeopathic medicines under the following names: Capsicum annuum; Cap. a.

Effects on the gastrointestinal tract. The initial response to the ingestion of a hot pepper is a hot or burning sensation in the mouth, which is attributed to the binding of capsaicin to receptors in the oral cavity.¹ Casein-containing substances such as milk can reverse this burning sensation, apparently by displacing capsaicin, this being due to their lipophilicity.

Spicy meals have long been associated with gastrointestinal discomfort and ingestion of meals containing 1.5 g of red or black pepper has been shown to cause signs of gastric mucosal damage comparable with those caused by a 625-mg dose of aspirin.² However, other studies in animals³ and humans^{4,5} suggest that capsaicin may have a protective effect on gastric mucosa. Ingestion of about 30 g of jalapeño peppers (a capsicum fruit) caused no visible damage to the duodenal or gastric mucosa of 12 healthy subjects⁶ and daily ingestion of meals containing a total of 3 g of chilli powder did not affect the clinical progress of patients with duodenal ulcers given antacids.⁷

- Henkin R. Cooling the burn from hot peppers. *JAMA* 1991; **266**: 2766.
- Myers BM, et al. Effect of red pepper and black pepper on the stomach. *Am J Gastroenterol* 1987; **82**: 211–14.
- Holzer P. Peppers, capsaicin, and the gastric mucosa. *JAMA* 1989; **261**: 3244–5.
- Kang JY, et al. Chili—protective factor against peptic ulcer? *Dig Dis Sci* 1995; **40**: 576–9.
- Yeoh KG, et al. Chili protects against aspirin-induced gastroduodenal mucosal injury in humans. *Dig Dis Sci* 1995; **40**: 580–3.
- Graham DY, et al. Spicy food and the stomach: evaluation by videoendoscopy. *JAMA* 1988; **260**: 3473–5.
- Kumar N, et al. Do chillies influence healing of duodenal ulcer? *BMJ* 1984; **288**: 1803–4.

Pepper sprays. References to the toxic effects of 'pepper sprays' containing capsicum oleoresin.

- Zollman TM, et al. Clinical effects of oleoresin capsicum (pepper spray) on the human cornea and conjunctiva. *Ophthalmology* 2000; **107**: 2186–9.
- Chan TC, et al. The effect of oleoresin capsicum "pepper" spray inhalation on respiratory function. *J Forensic Sci* 2002; **47**: 299–304.

Preparations

Ph. Eur.: Capsicum Tincture, Standardised.

Proprietary Preparations (details are given in Part 3)

Arg.: Redol†; **Austria:** ABC; **Braz.:** Hercap; **Chile:** Dolorub Capsico; Parche Leon Fortificante; **Chad:** Arme-Plaster†; **Capsamol:** Dolenon†; **Hansaplast ABC:** Warme-Pflaster†; **Jucuba:** Rheumamed; **Thermo Burger:** **Israel:** Dragon Plaster; **Ital.:** Cerotto Bertelli Arnikos; **Dolpoc:** Thermogene; **Port.:** Neodor; **UK:** Fiery Jack; **USA:** Salonpas Hot.

Multi-ingredient: **Arg.:** Bifena; **Infranub†;** Sebule; **Veracolate;** **Austral.:** APR Cream†; **Bioglan Joint Mobility;** Bioglan The Blue One; **Euphrasia Complex;** Euphrasia Compound; **For Peripheral Circulation Herbal Plus Formula 5;** **Gingo A†;** **Goanna Heat Cream;** **Lifsystem Herbal Formula 6 For Peripheral Circulation†;** **Percutane;** **Radian-B†;** **Valerian†;** **Austria:** Mentopin; **Salhumin;** **Trauma-Salbe wamend;** **Belg.:** Rado-Salli; **Stilene;** **Thermocream;** **Braz.:** Pilulas Ross; **Canad.:** Absorbine Arthritis; **Cayenne Plus†;** **Rheumalg†;** **Rhumatisme;** **Fc.:** Disalgyl†; **Kamol†;** **Le Thermogene†;** **Ger.:** Caye Rheuma-Balsam; **Gothaplast Rheumamed AC;** **Hong Kong:** LEAN Formula w/ Advantra†; **India:** Algipan; **Flexi-muv;** **Inflazone;** **Relaxyl;** **Indon.:** Osteo-C; **Sloan's Liniment;** **Israel:** Ment-O-Cap; **Radian-B;** **Rublex Massage Cream;** **Ital.:** Altadrine; **Capsco;** **Capsolin;** **Gelovis;** **Remy;** **Sloan;** **Malaysia:** Dandelion Complex†; **Total Man†;** **Mex.:** Parche Negro Belladonna; **Neth.:** Cremor capsici comp; **Cremor Capsici compositus;** **Kruidvat Spierbalsem;** **Pol.:** Kapsiplast; **Port.:** Carolid†; **Medalgian;** **Rus.:** Efcamon (Эфкомон); **Espol (Эспол);** **S.Afr.:** Brooklax Pills; **Infranub;** **Moultons Pain Paint;** **Muscle Rub;** **SB 3 Triple Action Pills;** **SB Shisalene;** **Sloan's Heat Rub;** **Sloan's Liniment Rub;** **Tandpyndruppels;** **Spain:** Dololce; **Embrocacion Gras;** **Linimento Naion;** **Termostan;** **Switz.:** Carmol Plus†; **Massorax†;** **Midalgan;** **Thai:** Flatulence; **Meloidis;** **Veracolate;** **Turk.:** Algo-Wax; **Capsalgine;** **Capsi-Gel;** **Gelocaps;** **Mentolin;** **UK:** Allens Dry Tickly Cough; **Balmosa;** **Buttercup Syrup;** **Catarrh Mixture;** **Cremalgin;** **Fiery Jack;** **Hactos;** **Hansaplast Herbal Heat Plaster;** **Herbal Indigestion Naturtubs;** **Honey & Molasses;** **Indian Brandy;** **Indigestion and Flatulence;** **Indigestion Relief;** **Jamaican Sarsaparilla;** **Kilkof;** **Life Drops;** **Potters Strong Bronchial Catarrh Pastilles;** **Potters Sugar Free Cough Pastilles;** **Radian-B;** **Ralgex;** **Rheumatic Pain Relief;** **Sanderson's Throat Specific;** **Vegetable Cough Remover;** **USA:** Salonpas Gel Patch; **Throat Discs;** **Venez.:** Ehrlich Balsamo.

Caraway

Alcaravea; Alcaravia; Caraway Fruit; Caraway Seed; Carum; Carvi; Carvi fructus; Cumin des Prés; Fructus Carvi; Kmnínový plod; Kmyňu vaisiai; Köménytermés; Kumina; Kümmel; Kummin; Owoc kminku.

Pharmacopoeias. In *Eur.* (see p.vii). Also in *USNF*.

Ph. Eur. 6.2 (Caraway Fruit; Caraway BP 2008). The whole, dried fruits of *Carum carvi*. It contains not less than 3.0% v/w of essential oil, calculated with reference to the dried drug. It has an odour reminiscent of carvone. Protect from light.

The BP 2008 directs that when Powdered Caraway is prescribed or demanded, material containing not less than 2.5% v/w of essential oil shall be dispensed or supplied.

USNF 26 (Caraway). The dried, ripe fruit of *Carum carvi* (Apiaceae). Preserve against attack by insects.