A. INGREDIENT NAME:

CANTHARIDIN

B. Chemical Name:

2,3 Dimethyl-7-Oxabicyclo [2.2.1.] Heptane-2,3 Dicarboxylic Anhydride

C. Common Name:

Cantascour, Cantaranone, Verr-Cansh, Cantascur-PS, Cantaranone Plus, Verrusol

D. Chemical grade or description of the strength, quality, and purity of the ingredient:

Result: The IR Spectrum exhibits the at Wν=1300, which is typical of Anhydrides and it conforms with the data reported in literature [Stork, G-ran Tamelen, E. et. al, J Am Chem Soc 75, 388 (1953)]

E. Information about how the ingredient is supplied:

Colorless glistening or orthorhombic plates, scales

F. Information about recognition of the substance in foreign pharmacopoeias:

Spas.

G. Bibliography of available safety and efficacy data including peer reviewed medical literature:


H. **Information about dosage forms used:**

   Liquid
   Apply directly to the lesion and cover the growth completely.

I. **Information about strength:**

   0.7%

J. **Information about route of administration:**

   Topically

K. **Stability data:**

   Melts at about 216-218°. Sublimes at about 110° with some fumes.
   Stable

L. **Formulations:**

M. **Miscellaneous Information:**
No. Records Request
* 1 14 cantharidin

Record 1 of 3 - IPA 1970-3/98

TI: Warts and their remedies
AU: Lau-I, Grant-D
SO: On-Contin-Pract (OCP-On-Continuing-Practice); 1986; 13(Oct); 29-34
PY: 1986
AB: A review of the different categories of standard wart treatments is presented. Nonprescription therapy involving salicylic acid, and collodions and an evaluation of some wart remedies are discussed. Schedule drugs such as cantharidin, podophyllin resin (podophyllin) are described. It was concluded that the pharmacist has a valuable role to play by offering information and advice on the proper use of the many nonprescription medications available to treat warts.
AN: 24-07121

Record 2 of 3 - IPA 1970-3/98

TI: Psoriasis: a defect in the regulation of epidermal proteases, as shown by serial biopsies after cantharidin application
SO: Br J Dermatol (British-Journal-of-Dermatology); 1984; 110(Apr); 405-410
PY: 1984
AB: The effect of cantharidin (I) solutions on normal and psoriatic skin was studied in order to elucidate the possible role of epidermal serine proteases in the genesis of psoriatic lesions. In the skin of normal subjects, I induced epidermal damage was followed by the transient appearance of proteolytic activity in the upper epidermis accompanied by temporary hyperacanthosis and perivascular inflammatory cells in the superficial dermis. In the uninvolved skin of 5 psoriatic patients this proteinolysis persisted longer, for more than 7 days. Therefore, in 3 of the patients, the proteinolysis abated, and this was followed by the disappearance of the hyperacanthosis and the dermal infiltrate; in the other 2 psoriatrics the proteinolysis and hyperacanthosis increased. It was suggested that the abnormal persistence of proteinolytic activity in the upper epidermis after I application distinguishes the normal from the psoriatic skin injury response and might initiate the psoriatic lesion.
AN: 22-03599

Record 3

TI: Warts and what to do about them
AU: Rasmussen-JE
SO: Drug Therapy (Drug-Therapy); 1981; 11(Nov); 65-67, 71-72, 74
PY: 1981
AB: Factors influencing the therapy of warts are discussed, and recommendations on the use of cryotherapy with liquid nitrogen, caustics or irritants, cantharidin, and other drugs, are given. The treatment is based on the number, size, location of the warts, as well as the patient's lifestyle and physical condition.
AN: 20-03288
CANTHARIDIN

**Human Toxicities:**
As little as 10 milligrams has been reported to cause death but the usual “minimum lethal dose” quoted is between 32 and 65 milligrams.

Exposure to 175 milligrams caused second and third degree burns of the mouth, seizures, kidney damage and hypotension, but the patient survived.

Ingestion of 105 to 140 milligrams produced ulceration and inflammation of the oral mucosa; the patient developed hematuria and T wave abnormalities, but recovered (adult ingested 1.5 to 2 ml of wart remover containing 0.7% cantharidin). Arrhythmias have been reported to occur.

It is extremely toxic (1 mg/kg) orally and by inhalation and is corrosive to eyes, skin and mucous membranes.

Systemic toxicity can develop after dermal (topical) or oral exposure.

Could be a potential carcinogen (limited evidence) from dermal mouse carcinogenicity studies (squamous cell carcinomas, papillomas). Internal tumors (lymphomas, reticulum cell tumors) may be of significance.

Cantharidin is irritating to the mouth and throat, and can cause keratitis, iritis and edema of the eyelids. Hypotension, tachycardia, arrhythmias, ataxia, syncope and delirium have been noted.
**Cantharidin** (cont.)

Symptoms of acute poisoning from ingestion include burning of the mouth, nausea, dysphagia, hematemesis, hematuria, dysuria, erosion and hemorrhage of the upper GI tract, renal dysfunction and failure due to acute tubular necrosis and destruction of the glomeruli. Less common effects are cardiac abnormalities, priapism and seizures.

Low grade disseminated intravascular coagulation has been reported in patients with acute cantharidin poisoning.

Fatty changes, parenchymatous degeneration, and a severe effect on hepatic organ structure may be seen.

TOPICAL application of cantharidin produced acute lymphangitis and persistent lymphedema in one case. Although edema and subpleural hemorrhages may be seen, the lungs are usually not seriously damaged. Respiration is greatly stimulated, then greatly depressed.

Mild to severe skin reactions may occur. Acantholysis has been reported as in pemphigus (skin blistering diseases).

It has been recommended that “owing to the high toxicity of Cantharidin, it is recommended that preparations containing it should not be used medicinally.”

Public Safety: Toxic and/or corrosive. Upon decomposition emits corrosive, toxic and irritating fumes. In contact with metals, it may evolve hydrogen gas.
Cantharidin (cont.)

Uses:
Cantharidin has been used:
-as a homicidal agent in South Africa.

Herbalist uses: for treatment of dropsy, pleurisy, pericarditis, kidney infections, kidney stones, stranguria (painful micturation), certain venereal diseases and amenorrhea, and as a putative aphrodisiac.

Modern uses: a counter irritant and vesicant in a 0.7% concentration in collodion (Verr-Canth, Pallisades Co.; Cantharon).
REFERENCES


