

Skin disorders. Acitretin is used alone or with PUVA (a psoralen with UVA irradiation) or UVB in psoriasis¹⁻⁴ (p.1583). Studies have shown that use with PUVA or UVB light may increase efficacy and allow a reduction in the exposure to radiation required. It is also used in keratinisation disorders such as severe forms of ichthyosis^{1,5-7} (p.1580) and Darier's disease (keratosis follicularis)^{1,8} (p.1578). Benefit has been reported in various other skin disorders including lichen planus (p.1580), lichen sclerosus (p.1580), and cutaneous lupus erythematosus (p.1513).¹

1. Berbis P. Acitretin. *Ann Dermatol Venereol* 2001; **128**: 737-45.
2. Lebowitz M, et al. Consensus conference: acitretin in combination with UVB or PUVA in the treatment of psoriasis. *J Am Acad Dermatol* 2001; **45**: 544-53.
3. Lee CS, Koo J. A review of acitretin, a systemic retinoid for the treatment of psoriasis. *Expert Opin Pharmacother* 2005; **6**: 1725-34.
4. British Association of Dermatologists. Psoriasis guideline 2006. Available at: [http://www.bad.org.uk/healthcare/guidelines/psoriasis_guideline_\(Final_update\)_280906.pdf](http://www.bad.org.uk/healthcare/guidelines/psoriasis_guideline_(Final_update)_280906.pdf) (accessed 27/09/07)
5. Bruckner-Tuderman L, et al. Acitretin in the symptomatic therapy for severe recessive X-linked ichthyosis. *Arch Dermatol* 1988; **124**: 529-32.
6. Steijlen PM, et al. Acitretin in the treatment of lamellar ichthyosis. *Br J Dermatol* 1994; **130**: 211-14.
7. Katugampola RP, Finlay AY. Oral retinoid therapy for disorders of keratinization: single-centre retrospective 25 years' experience on 23 patients. *Br J Dermatol* 2006; **154**: 267-76.
8. van Dooren-Greebe RJ, et al. Acitretin monotherapy in Darier's disease. *Br J Dermatol* 1989; **121**: 375-9.

Preparations

USP 31: Acitretin Capsules.

Proprietary Preparations (details are given in Part 3)

Arg.: Neotigason; **Austral.:** Neotigason; **Austria:** Neotigason; **Belg.:** Neotigason; **Braz.:** Neotigason; **Canad.:** Soriatane; **Chile:** Neotigason; **Cz.:** Neotigason; **Denm.:** Neotigason; **Fin.:** Neotigason; **Fr.:** Soriatane; **Ger.:** Neotigason; **Gr.:** Neotigason; **Hong Kong:** Neotigason; **Hung.:** Neotigason; **Irl.:** Neotigason; **Israel:** Neotigason; **Ital.:** Neotigason; **Malaysia:** Neotigason; **Mex.:** Neotigason; **Neth.:** Neotigason; **Norw.:** Neotigason; **NZ:** Neotigason; **Philipp.:** Neotigason; **Pol.:** Neotigason; **Port.:** Neotigason; **S.Afr.:** Neotigason; **Singapore:** Neotigason; **Spain:** Neotigason; **Swed.:** Neotigason; **Switz.:** Neotigason; **Thai.:** Neotigason; **Turk.:** Neotigason; **UK:** Neotigason; **USA:** Soriatane; **Venez.:** Neotigason.

Adapalene (BAN, USAN, rINN)

Adapalene; Adapalen; Adapalène; Adapaleno; Adapalenum; CD-271. 6-[3-(1-Adamantyl)-4-methoxyphenyl]-2-naphthoic acid.

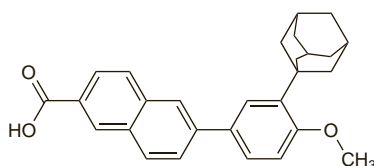
Адапален

C₂₈H₂₈O₃ = 412.5.

CAS — 106685-40-9.

ATC — D10AD03.

ATC Vet — QD10AD03.



Adverse Effects and Precautions

As for Tretinoin, p.1618.

Pregnancy. Anophthalmia and agenesis of the optic chiasma were found in a fetus after termination of pregnancy in a woman who had applied adapalene 0.1% topically from the month before pregnancy until 13 weeks of gestation.¹

1. Autret E, et al. Anophthalmia and agenesis of optic chiasma associated with adapalene gel in early pregnancy. *Lancet* 1997; **350**: 339.

Uses and Administration

Adapalene is a naphthoic acid derivative and retinoid analogue with actions similar to those of tretinoin (p.1619). Adapalene is used in topical treatment of mild to moderate acne (p.1577) where comedones, papules, and pustules predominate.

Adapalene is usually applied once daily at night as a 0.1% solution, cream, or gel to skin that has been cleansed and dried; a 0.3% gel is also available. Some patients may require less frequent applications. Other topical preparations that may cause irritation should not be used concurrently. If treatment with topical antibacterials or benzoyl peroxide is required, these should be applied in the morning and adapalene applied at night.

The symbol † denotes a preparation no longer actively marketed

There may be apparent exacerbations of the acne during early treatment and a consistent therapeutic response may not be evident for at least 8 weeks. However, if there is no response after 12 weeks, therapy should be reassessed.

For use in young children, see below.

References

1. Brogden RN, Goa KL. Adapalene: a review of its pharmacological properties and clinical potential in the management of mild to moderate acne. *Drugs* 1997; **53**: 511-19.
2. Waugh J, et al. Adapalene: a review of its use in the treatment of acne vulgaris. *Drugs* 2004; **64**: 1465-78.
3. Pariser DM, et al. Adapalene Study Group. The efficacy and safety of adapalene gel 0.3% in the treatment of acne vulgaris: a randomized, multicenter, investigator-blinded, controlled comparison study versus adapalene gel 0.1% and vehicle. *Cutis* 2005; **76**: 145-51.
4. Thiboutot D, et al. Adapalene Study Group. Adapalene gel 0.3% for the treatment of acne vulgaris: a multicenter, randomized, double-blind, controlled, phase III trial. *J Am Acad Dermatol* 2006; **54**: 242-50.
5. Thiboutot DM, et al. Adapalene gel, 0.1%, as maintenance therapy for acne vulgaris: a randomized, controlled, investigator-blind follow-up of a recent combination study. *Arch Dermatol* 2006; **142**: 597-602.

Administration in children. Although not licensed for young children in the UK the *BNFC* includes adapalene 0.1% cream and gel, applied thinly once daily at night, for neonatal and infantile acne.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Adapne; Differin; Panalene; Sinac; **Austral.:** Differin; **Austria:** Differin; **Belg.:** Differin; **Braz.:** Dalap; Differin; **Canad.:** Differin; **Chile:** Adiamit; Differin; **Cz.:** Differin; **Denm.:** Redap; **Fin.:** Differin; **Fr.:** Differin; **Ger.:** Differin; **Gr.:** Adafarin; **Hong Kong:** Differin; **Hung.:** Differin; **India:** Adlene; Adafarin; Adiff; Deriva; **Indon.:** Evalen; **Irl.:** Differin; **Israel:** Adafarin; **Ital.:** Differin; **Malaysia:** Differin; **Mex.:** Adafarin; **Neth.:** Differin; **Norw.:** Differin; **NZ:** Differin; **Philipp.:** Differin; Klenzit; **Pol.:** Differin; **Port.:** Differin; **Rus.:** Differin (Дифферин); **S.Afr.:** Differin; **Singapore:** Differin; **Spain:** Differin; **Swed.:** Differin; **Switz.:** Differin; **Thai.:** Differin; **Turk.:** Differin; **UK:** Differin; **USA:** Differin; **Venez.:** Differin.

Multi-ingredient: **Fr.:** Epiduo; **India:** Deriva-C.

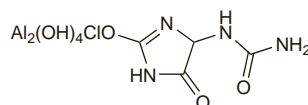
Alcloxa (USAN, rINN)

ALCA; Alcloxum; Aluminium Chlorhydroxyallantoinate; RC-173. Chlorotetrahydroxy[(2-hydroxy-5-oxo-2-imidazolin-4-yl)ureato]-dialuminium.

АЛКЛОКСА

C₄H₉Al₂ClN₄O₇ = 314.6.

CAS — 1317-25-5.



Profile

Alcloxa is an astringent and keratolytic related to allantoin (below). It is present in multi-ingredient preparations intended for various skin and gastrointestinal disorders.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Babysan Powder.

Multi-ingredient: **Hong Kong:** Pilelife; **Malaysia:** Neo-Medrol; **NZ:** Acnedermt; **Singapore:** Neo-Medrol; **Thai.:** Neo-Medrol; **UK:** Dermidex.

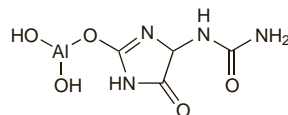
Aldioxa (USAN, rINN)

ALDA; Aldioxum; Aluminium Dihydroxyallantoinate; Dihydroxy-aluminium Allantoinate; RC-172. Dihydroxy[(2-hydroxy-5-oxo-2-imidazolin-4-yl)ureato]aluminium.

АЛДИОКСА

C₄H₇AlN₄O₅ = 218.1.

CAS — 5579-81-7.



Pharmacopoeias. In *Jpn*.

Profile

Aldioxa is an astringent and keratolytic related to allantoin (below). It is present in multi-ingredient preparations intended for various skin and gastrointestinal disorders.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Arg.:** ZeaSorby; **Austral.:** ZeaSorby; **Canad.:** ZeaSorby; **Chile:** ZeaSorby; **Fr.:** ZeaSorby; **Indon.:** ZeaSorby; **Irl.:** ZeaSorby; **Israel:** Ar-onal Forte; **Ital.:** Rikospray; **Malaysia:** ZeaSorby; **Mex.:** Dentsiblen; **Philipp.:** ZeaSorby; **S.Afr.:** ZeaSorby; **Singapore:** ZeaSorby; **Thai.:** ZeaSorby; **UK:** Cetanorm; ZeaSorby.

Alefacept (BAN, USAN, rINN)

Aléfacept; Alefaceptum; BG-9273; BG-9712; LFA3TIP; Recombinant Human LFA-3/1gG₁ Fusion Protein. A dimer of 1-92 antigen LFA-3 (human) fusion protein with human immunoglobulin G1 (hinge-C_H-2-C_H-3 γ1-chain).

Алефэце́пт

CAS — 222535-22-0.

ATC — L04AA15.

ATC Vet — QL04AA15.

Adverse Effects and Precautions

Chills are common on intravenous dosage of alefacept. Other adverse effects are cough, dizziness, headache, injection site pain and inflammation, myalgia, nausea, pharyngitis, and pruritus. More serious adverse reactions are cardiovascular events (including coronary artery disorder and myocardial infarction), hypersensitivity reactions, lymphopenia, and serious infections requiring hospitalisation. Cases of hepatotoxicity including asymptomatic transaminase elevation, fatty infiltration of the liver, hepatitis, and acute liver failure have occurred. Like other drugs with immunosuppressant actions, alefacept may increase the risk of malignancies, particularly basal or squamous cell cancers of the skin. It should not be given to patients with a history of malignancy.

Alefacept should also not be given to patients with pre-existing serious infections, and should be stopped if these develop. Its use should be considered carefully in patients with chronic infections or a history of recurrent infection.

Alefacept induces a dose-dependent reduction in circulating CD4+ and CD8+ T-lymphocyte counts. It is therefore also contraindicated in patients with HIV infection as the reduction in CD4+ T-lymphocytes could accelerate disease progression or increase complications of HIV infection. CD4+ T-lymphocyte counts should be monitored before starting alefacept therapy and then every 2 weeks during the 12-week treatment period. Treatment should not be started in patients with a CD4+ T-lymphocyte count below normal. Doses should be withheld and weekly monitoring started if the counts fall below 250 cells/microlitre, and treatment stopped if the counts remain below this level for one month.

Therapy should be stopped immediately, and appropriate treatment given, in patients who experience anaphylaxis or serious hypersensitivity; it should not be restarted.

References

1. Goffe B, et al. An integrated analysis of thirteen trials summarizing the long-term safety of alefacept in psoriasis patients who have received up to nine courses of therapy. *Clin Ther* 2005; **27**: 1912-21.

Pharmacokinetics

Alefacept has a bioavailability of about 63% after intramuscular injection. After an intravenous dose it has an elimination half-life of about 11 to 12 days.

References

1. Vaishnav AK, TenHoor CN. Pharmacokinetics, biologic activity, and tolerability of alefacept by intravenous and intramuscular administration. *J Pharmacokinet Pharmacodyn* 2002; **29**: 415-26.

Uses and Administration

Alefacept is a recombinant human fusion protein that binds to CD2 on memory T-lymphocytes, preventing their activation and reducing their number. It is used in the management of moderate to severe chronic plaque psoriasis (p.1583) and is given in a dose of 7.5 mg once weekly by intravenous injection, or 15 mg once weekly by intramuscular injection, for 12 weeks. A second 12-week course may be given if necessary, starting not less than 12 weeks after the completion of the first.

General references

1. Ellis CN, Krueger GG. Treatment of chronic plaque psoriasis by selective targeting of memory effector T lymphocytes. *N Engl J Med* 2001; **345**: 248-55.
2. Krueger GG, et al. A randomized, double-blind, placebo-controlled phase III study evaluating efficacy and tolerability of 2 courses of alefacept in patients with chronic plaque psoriasis. *J Am Acad Dermatol* 2002; **47**: 821-33.
3. Krueger GG, Ellis CN. Alefacept therapy produces remission for patients with chronic plaque psoriasis. *Br J Dermatol* 2003; **148**: 784-8.

- Lebwohl M, *et al.* An international, randomized, double-blind, placebo-controlled phase 3 trial of intramuscular alefacept in patients with chronic plaque psoriasis. *Arch Dermatol* 2003; **139**: 719–27.
- Korman NJ, Moul DK. Alefacept for the treatment of psoriasis: a review of the current literature and practical suggestions for everyday clinical use. *Semin Cutan Med Surg* 2005; **24**: 10–18.
- Ortonne JP, *et al.* An open-label study of alefacept plus ultraviolet B light as combination therapy for chronic plaque psoriasis. *J Eur Acad Dermatol Venereol* 2005; **19**: 556–63.
- Mease PJ, *et al.* Alefacept in Psoriatic Arthritis Study Group. Alefacept in combination with methotrexate for the treatment of psoriatic arthritis: results of a randomized, double-blind, placebo-controlled study. *Arthritis Rheum* 2006; **54**: 1638–45.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Amevive; **Canad.:** Amevive; **Israel:** Amevive; **Switz.:** Amevive; **USA:** Amevive.

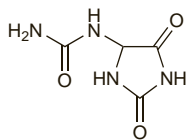
Allantoin (BAN, USAN)

Allantoin; Alantoína; Alantoinas; Allantoíni; Allantoïne; Allantoinum; Glyoxyldiureide. 5-Ureidohydantoin; 5-Ureidoimidazolidine-2,4-dione; 2,5-Dioxoimidazolidin-4-ylurea.

Аллантоин; Кордианин

$C_4H_6N_4O_3 = 158.1$.

CAS — 97-59-6.



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

Ph. Eur. 6.2 (Allantoin). A white or almost white, crystalline powder. Slightly soluble in water; very slightly soluble in alcohol.

USP 31 (Allantoin). A white crystalline powder. Slightly soluble in water; very slightly soluble in alcohol.

Profile

Allantoin is an astringent and keratolytic. It is present in multi-ingredient preparations intended for various skin disorders and is also used for its astringent properties in preparations for the treatment of haemorrhoids and other anorectal disorders.

Psoriasis. In the USA the FDA decided that allantoin should be removed from lotions indicated for psoriasis as it was considered to be ineffective.¹

- Anonymous. Nonprescription drug review gains momentum. *WHO Drug Inf* 1991; **5**: 62.

Preparations

Proprietary Preparations (details are given in Part 3)

Canad.: Soothex†; **India:** Masse; **Pol.:** Alantan.

Multi-ingredient: **Arg.:** Abanta; Afonisan; Atomoderma A-E; Bushi; Contractubex; Crema Para Paspaduras; Cremosor N; Dermaloe†; Esmedent; con Fluor; Euroderm-A; Factor Vit AE; Glossderm†; Lactocrem Bebe; Lochipor Liposomas Vitaminado; Medic†; Mencogrin; Mencogrin AP; Mencogrin†; Pastillas Lorbi; Pastillas Medex; Quem Plus†; **Austral.:** Acne & Pimple Gel†; Alphosyl; Blistex Medicated Lip Ointment; ER Cream†; Hemocane; Macro Natural Vitamin E Cream; Medi Creme; Medi Pulv; Paxyl; SoloSite; Solypol†; VR†; **Austria:** Alphosyl; Contractubex; Rheumex; Ulcunlen; **Braz.:** Contractubex; Lactrex; Senol†; Vitaderme; **Canad.:** Blistex Medicated Lip Ointment; Phenoris; Tanac†; **Chile:** Dermaglos; Dermaglos Plus†; Lactrex†; Nenegloss; Pancri†; Queratopil; Sanoderm; Ureadin 30; Ureadin Rx DB; Ureadin Rx PS; Ureadin Rx RD; **Cz.:** Brand- und Wundgel†; Contractubex; Jox; Panlid; **Fr.:** Alpha 5 DS†; Alphosyl†; Cicatryl; Erygine; Hydracuire; Prebutix; Provictol†; Purif-Ac Emulsion; Purif-Ac Gel; Seborheane; Spirial; Topialyse Fluide; Topialyse Plus; **Ger.:** Brand- und Wund-Gel Eu Rho†; Contractubex; Ellsuxex; Essaven Tri-Complex†; Haemo-Exhirud†; Hydro Cordes; Leukona-Wundsalbe†; Lipo Cordes; Psoriasis-Salbe 5†; Ulcunlen N†; **Hong Kong:** Blistex Lip Ointment†; Burn Cream†; Contractubex; Ego-derm; Ego-soryl TA; Medipulv†; Pyodontyl†; **Hung.:** Contractubex; Jox†; **India:** Contractubex; New Eye Lotion; Shield; **Indon.:** Mederma; Venile; **Israel:** Alphosyl HC†; Alphosyl†; Comfrey Plus; Pitrisan; Procto-zorin-N; Re-kasitin; **Ital.:** Alphosyl†; Angstrom Viso; Balta-Crin Tar†; Centella Complex; Cerostent; Cerox†; Ginoxil Ecoschiuma; Keraflex; Sensigel; Sensiquel†; Tial-Z; Xerial†; **Malaysia:** Ego-derm; Ego-soryl TA; **Mex.:** Antaderm; Dea-lan; Glossderm; Hipoglos; Hipoglos Cremoso; Lactrex; Sebryl Plus; Sebstop†; Unguento de la Madre; **NZ:** Ego-derm; Ego-soryl TA; Medipulv; **Philipp.:** Contractubex; **Pol.:** Alantan-Plus; Alantavit; Cepan; Contractubex; Dermilan; Mucosil; Pupilek; Septalan; Tointex; **Port.:** Hidratoderme†; **Rus.:** Contractubex (Контрактубекс); Hepatrombin B (Гепатромбин-В); Jox (Йокс); **S.Afr.:** Alphosyl; Arola Rosebalm; Blistex; Clearasil Medicated Facial Cleanser; **Singapore:** Ego-derm; Ego-soryl TA; Erase; **Spain:** Alphosyl; Amplidermes; Antigrietun; Cortenema; Egarone†; Hepro; Polaramine Topi-co; **Swed.:** Alphosyl†; **Switz.:** Alaphasia; Alphosyl†; Alumagall†; Carmol Plus†; Contractubex; Gorgonium; Hepathrombine†; Keli-med; Leniderm†; Lyman; Optrex compresses; Sportium; Unatol; Vulnisan; **Thai.:** Opplint†; **UK:** Actina; Alphosyl HC; Anodesyn; Atopiacin; Vesageex Helbalm; **USA:** Alasulf; Ambesol Cold Sore Therapy; Atopiacin; Blistex; Blistex Lip Balm; Deltavac; DIFI-2; Der Dermi-Heal†; Ionax Astringent; Orabase Lip; Tanac; Tanac Dual Core; **Venez.:** Alantamida; Lactrex.

Aloe Vera

Aloe.

Алоэ Вера; Алоэ Древовидное

Profile

Aloe vera gel is a mucilaginous preparation obtained from the leaves of *Aloe vera* (*A. barbadensis*). It does not include the sap of *Aloe vera*, which contains anthraquinones, and should not be confused with aloe (p.1705).

◇ Aloe vera is widely used in cosmetics and toiletries for a reported moisturising and revitalising action. There are also claims for the beneficial and even curative properties of aloe vera gel in the treatment of conditions such as acne, psoriasis, burns, wounds, arthritis, diabetes, hyperlipidaemia, peptic ulcer, and genital herpes.^{1,2} Evidence to support these claims is lacking. There is also no strong evidence to support the use of aloe vera gel in the prevention or treatment of radiation-induced skin reactions in cancer patients.³

- Marshall JM. Aloe vera gel: what is the evidence? *Pharm J* 1990; **244**: 360–2.

- Vogler BK, Ernst E. Aloe vera: a systematic review of its clinical effectiveness. *Br J Gen Pract* 1999; **49**: 823–8.

- Richardson J, *et al.* Aloe vera for preventing radiation-induced skin reactions: a systematic literature review. *Clin Oncol (R Coll Radiol)* 2005; **17**: 478–84.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Biorevit Gel†; Capson; Puraloe Post Solar; **Braz.:** Probeks†; Soapelle; **Fr.:** Veraskin; **Ital.:** Epitaloe; **NZ:** Solarcaine Aloe Vera; **Singapore:** Cura-caio.

Multi-ingredient: **Arg.:** Abanta; Acuaderm; Aloebe†; Aristaloe; Brunav-era; Controlacne; Crema De Ordene; Dermaloe†; Dermvien†; Eurocolor Post Solar; Europrotec Post Solar†; Galenic Restaurador Capilar; Herbacion Nutriderm†; KVV; Mucobase; Negacne; Odontobiotico†; Olamine; Pedicrem; Puraloe; Puraloe Nutritivo; Refrane P; Refrane Plus; Sadeltan F†; Snella Vag; Solenil Post Solar; Talowin; Yuyo; **Austral.:** Aloe Vera Plus; Lipz Lip Ointment; Percutane; Psor-Assist; Rapaid Rash-Relief; **Braz.:** Actine; Derm'active Solaire†; Malvatricin Natural Soft; **Chile:** Ac-Sal; Fray Romano; Nenegloss; Solarcaine Aloe Vera Gel; Ureadin Rx DB; Ureadin Rx RD; **Cz.:** After Burn†; **Fr.:** Alkagin; Alrai†; Cicatridine; Postopyl†; Rhinodoron; **Ger.:** Rhinodoron; **Hong Kong:** Apaisac; Pregnacare; **India:** Elovera; Elovera-SPF; Solderm; **Indon.:** Jointift; Velostin; **Israel:** Agisten with Aloe Vera; Aphotagone; Apha-X; **Ital.:** Capso; Ektrofil; Ginoxil Ecoschiuma; Ninfagin; Vicks Baby Balsam†; Vulnopur; **Malaysia:** Boots Antenatal Massage Cream†; Elovera; Loralis Feminine Hygiene†; Neo-Healar; **Mex.:** Gel-conordin; Hipoglos Cremoso; **NZ:** Chap Stick; Lamisl Odor Eze; Vicks Baby Balsam; **Philipp.:** Elovera; Intima; **Port.:** Alkagin; Antiacneicos Ac-Sal†; Multi-Mam Compressas†; **Singapore:** Cortaid with Aloe†; Destin Creamy†; **UK:** Antiac; Don't Bug Me; Sinose; Solarcaine†; **USA:** Aloe Grande; Biotene with Calcium; Bodi Kleen; Dermtex HC with Aloe; Entertainer's Secret; Geri-Lav Free; Gold Bond Medicated Triple Action Relief; Hawaiian Tropic Cool Aloe with I.C.E.; Hemorid For Women; Maximum Strength Flexall 454; Nasal-Ease; OraMagiRx; RadiaPlex Rx; Solarcaine Aloe Extra Burn Relief; **Venez.:** Andantol Jalea; Fluciac; Gelsam; Jengimiel; Jengimiel Sabila.

Aluminium Chloride

Aluminio chloridas heksahidratas; Alumiinikloridihexahydraatti; Aluminii chloridum hexahydricum; Aluminio, cloruro de; Aluminium Chloratum; Aluminium (chlorure d') hexahydraté; Aluminium-klorid-hexahydriat; Aluminiumkloridhexahydrat; Aluminium Chloride; Chlorid hlinitý hexahydriat; Cloreto de Aluminio; Cloruro de Aluminio; Glinu chlorek. Aluminium chloride hexahydrate.

Алюминия Хлорида

$AlCl_3 \cdot 6H_2O = 241.4$.

CAS — 7446-70-0 (anhydrous aluminium chloride); 7784-13-6 (aluminium chloride hexahydrate).

ATC — D10AX01.

ATC Vet — QD10AX01.

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

Ph. Eur. 6.2 (Aluminium Chloride Hexahydrate). A deliquescent, white or slightly yellow, crystalline powder or colourless crystals. Very soluble in water; freely soluble in alcohol; soluble in glycerol. Store in airtight containers.

USP 31 (Aluminium Chloride). Deliquescent, white or yellowish-white, practically odourless, crystalline powder. Its solutions are acid to litmus. Soluble 1 in 0.9 of water and 1 in 4 alcohol; soluble in glycerol. Store in airtight containers.

Adverse Effects

Aluminium chloride may cause irritation especially if applied to damp skin; this is attributed to the formation of hydrochloric acid.

Uses and Administration

Aluminium chloride has astringent properties and is used in a 20% alcoholic solution as an antiperspirant in the treatment of hyperhidrosis (p.1580). It is applied to dry skin, usually at bedtime, and is washed off in the

morning before the sweat glands are fully active. Initially, it may be applied each night until sweating improves, then less frequently, as required, to maintain efficacy.

References

- Scholes KT, *et al.* Axillary hyperhidrosis treated with alcoholic solution of aluminium chloride hexahydrate. *BMJ* 1978; **2**: 84–5.
- Ellis H, Scurr JH. Axillary hyperhidrosis – topical treatment with aluminium chloride hexahydrate. *Postgrad Med J* 1979; **55**: 868–9.

Preparations

BP 2008: Aluminium Chloride Solution.

Proprietary Preparations (details are given in Part 3)

Arg.: Alumpak; Anhidrot†; Drysol; **Austral.:** Dridor; Odaban†; **Chile:** Drysol; Xerac AC; **Fr.:** Dridor; Etiaxil; **Ger.:** Gargarisma zum Gurgeln; Mal-lebrin Konzentrat; **Hong Kong:** Dridor; **Ir.:** Anhydrol Forte; Dridor; **Israel:** Anhydrol Forte; **Malaysia:** Dridor†; **Mex.:** Drysol; **NZ:** Hidrosol; **Philipp.:** Dridor; **Pol.:** Antidral; **S.Afr.:** Dridor; **Singapore:** Dridor; **Switz.:** Etiaxil; Racemente†; **UK:** Anhydrol Forte; Dridor; Odaban; **USA:** Drysol; Xerac AC.

Multi-ingredient: **Arg.:** Carnot Topico; **Chile:** Hidrofulag; Hidrofugal Forte; **Mex.:** Prespir; **Switz.:** Sansilla; **USA:** Stypto-Caine.

Aluminium Chlorohydrate

Aluminio, clorohidróxido de; Aluminium Chlorhydrate; Aluminium Chloride Hydroxide Hydrate; Aluminium Chlorhydroxide; Aluminium Chloride Hydroxide Hydrate; Aluminium Chlorohydrate (USAN); Aluminium Hydroxychloride; Alüminyum Hidrok-siklorür; Basic Aluminium Chloride.

Алюминия Хлорогидрат

$Al_2(OH)_5Cl \cdot xH_2O$.

CAS — 1327-41-9 (anhydrous aluminium chlorohydrate).

ATC — D09AA08; M05BX02.

ATC Vet — QD09AA08; QM05BX02.

Pharmacopoeias. In *US*.

US also includes a range of compounds based on aluminium chlorohydrate. These are:

- aluminium dichlorohydrate and sesquichlorohydrate
- the polyethylene glycol (macrogol) complexes and propylene glycol complexes of aluminium chlorohydrate, aluminium dichlorohydrate, and aluminium sesquichlorohydrate
- the tri-, tetra-, penta-, and octachlorohydrates of aluminium zirconium and their respective glycine derivatives.

USP 31 (Aluminium Chlorohydrate). A 15% w/w solution in water has a pH of 3.0 to 5.0

Profile

Aluminium chlorohydrate is used similarly to aluminium chloride in hyperhidrosis (p.1580). Single-ingredient products for hyperhidrosis generally have a concentration in the range of 10 to 25%.

Aluminium chlorohydrate is also included in a variety of dermatological preparations for its astringent and antiperspirant properties.

Aluminium toxicity. Bone pain, extreme fatigue, and raised aluminium concentrations in a woman with normal renal function were attributed to the use of an antiperspirant cream containing aluminium chlorohydrate 20%. She had been applying about 1 g of cream to each underarm daily for 4 years. Within 8 months of stopping the antiperspirant, plasma-aluminium concentrations had returned to normal and symptoms had resolved.¹

- Guillard O, *et al.* Hyperaluminemia in a woman using an aluminium-containing antiperspirant for 4 years. *Am J Med* 2004; **117**: 956–9.

Preparations

USP 31: Aluminium Chlorohydrate Solution; Aluminium Dichlorohydrate Solution; Aluminium Sesquichlorohydrate Solution; Aluminium Zirconium Octachlorohydrate Gly Solution; Aluminium Zirconium Pentachlorohydrate Solution; Aluminium Zirconium Pentachlorohydrate Gly Solution; Aluminium Zirconium Tetrachlorohydrate Solution; Aluminium Zirconium Tetrachlorohydrate Gly Solution; Aluminium Zirconium Trichlorohydrate Solution; Aluminium Zirconium Trichlorohydrate Gly Solution.

Proprietary Preparations (details are given in Part 3)

Arg.: Bromhistop; Daewoj†; Normoskin†; Sodorant; **Canad.:** Roll-On†; Scholl Dry Antiperspirant Foot Spray†; **Chile:** Hansaplast Footcare; Hidro-fugal; **Fr.:** pM; **Spain:** **Ger.:** Phosphonorm; **Israel:** Aloxa; **Italy:** Spinal; **Mex.:** Skin Dry; **NZ:** Neat Effect; Neat Feet; Neat One; Neat Touch; **Port.:** Dermagor; Antitranspirante; Lambda; **Switz.:** Alopon†; Gelsica; Phosphonorm; Sansudor; **Turk.:** Kursept; Terkur†; **UK:** Chiron Barrier Cream; **USA:** Bromi-Lotion.

Multi-ingredient: **Arg.:** Neobitoli; Sodorant; Ublodid†; **Austral.:** Nappy-Mate†; Neo-Medrol; **Austria:** Sulgan 99; **Canad.:** Medrol Acne Lotion; Neo-Medrol Acne; **Chile:** Hidrofugal; Hidrofugal Forte; Lady Fittig†; Unage Desodorante Tri-Activ†; **Fin.:** Neo-Medrol comp†; **Fr.:** Spinal; **Ger.:** Ansu-dor†; Epipak†; **Hong Kong:** Neo-Medrol Acne; **Indon.:** Betiga; **Israel:** Fungimol; Neo-Medrol; Pedisol; **Ital.:** Medrol Lozione Antiacne†; **S.Afr.:** Neo-Medrol; **Spain:** Hongosan; Modernin Acne†; **USA:** Breeze Mist Foot Powder; Ostiderm.