Oral bioavailability is less than 1%. Ciclesonide and its active metabolite are extensively bound to plasma proteins. It is further metabolised to inactive metabolites via the cytochrome P450 isoenzyme CYP3A4. After oral or intravenous dosage, ciclesonide is mainly excreted via the faeces.

◊ References.

1. Rohatagi S, *et al.* Population pharmacokinetics and pharmacodynamics of ciclesonide. *J Clin Pharmacol* 2003; **43:** 365–78.
2. Nave R, *et al.* Pharmacokinetics of [C]ciclesonide after oral and intravenous administration to healthy subjects. *Clin Pharmacokinet* 2004; **43:** 479–86.
3. Derendorf H. Pharmacokinetic and pharmacodynamic properties of inhaled ciclesonide. *J Clin Pharmacol* 2007; **47:** 782–9.

Uses and Administration

Ciclesonide is a corticosteroid with glucocorticoid activity (p.1490). It is used by inhalation in the management of asthma (p.1108) in adults and adolescents aged 12 years and older. The usual dose is 160 micrograms once daily from a metered-dose aerosol; the dose may be reduced to 80 micrograms once daily for maintenance. It is preferably given in the evening. Ciclesonide is given intranasally for the treatment of seasonal and perennial allergic rhinitis (p.565) in adults and adolescents 12 years of age and older; children 6 years of age and older may be treated for seasonal allergic rhinitis. A dose of 200 micrograms once daily is given as 2 sprays of 50 micrograms into each nostril.

◊ References.

1. Postma DS, *et al.* Treatment of asthma by the inhaled corticosteroid ciclesonide given either in the morning or evening. *Eur Respir J* 2001; **17:** 1083–8.
2. Reynolds NA, Scott LJ. Ciclesonide. *Drugs* 2004; **64:** 511–19.
3. Christie P. Ciclesonide: a novel inhaled corticosteroid for asthma. *Drugs Today* 2004; **40:** 569–76.
4. Chapman KR, *et al.* Maintenance of asthma control by once-daily inhaled ciclesonide in adults with persistent asthma. *Allergy* 2005; **60:** 330–7.
5. Dhillon S, Wagstaff AJ. Ciclesonide nasal spray: in allergic rhinitis. *Drugs* 2008; **68:** 875–83.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Alvesco; Cicletex; ***Austral.:*** Alvesco; ***Braz.:*** Alvesco; ***Chile:*** Alvesco; ***Cz.:*** Alvesco; ***Gr.:*** Alvesco; Amavio; Freathe; ***Hong Kong:*** Alvesco; ***Hung.:*** Alvesco; ***India:*** Osonide; ***Irl.:*** Alvesco; ***Malaysia:*** Alvesco; ***Mex.:*** Alvesco; ***Neth.:*** Alvesco; ***Pol.:*** Alvesco; ***S.Afr.:*** Alvesco; ***UK:*** Alvesco; ***USA:*** Alvesco; Omnaris; ***Venez.:*** Alvesco.

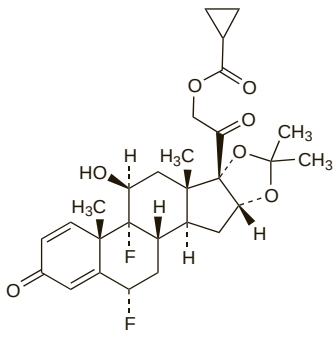
Ciprocinonide *(USAN, rINN)* ⊗

Ciprocinonida; Ciprocinonidum; RS-2386. (6α,11β,16α)-21-[(cyclopropylcarbonyl)oxy]-6,9-difluoro-11-hydroxy-16,17-[(1-methylethylidene)-bis(oxy)]-pregna-1,4-diene-3,20-dione.

Ципроцинонид

$C_{28}H_{34}F_2O_7$ = 520.6.

CAS — 58524-83-7.



Profile

Ciprocinonide is a derivative of fluocinolone acetonide (p.1531) that has been applied topically with fluocinonide and procinonide in the management of various skin disorders.

Clobetasol Propionate *(BANM, USAN, rINNM)* ⊗

CCI-4725; Clobétasol, propionate de; Clobetasoli propionas; GR-2/925; Klobetasol-propionát; Klobetazol Propiyonat; Klobetazolu propionian; Propionato de clobetasol. 21-Chloro-9α-fluoro-11β,17α-dihydroxy-16β-methylpregna-1,4-diene-3,20-dione 17-propionate.

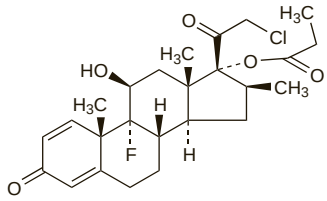
Клобетазола Пропионат

$C_{25}H_{32}ClFO_5$ = 467.0.

CAS — 25122-41-2 (clobetasol); 25122-46-7 (clobetasol propionate).

ATC — D07AD01.

ATC Vet — QD07AD01.



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

Ph. Eur. 6.2 (Clobetasol Propionate). A white or almost white, crystalline powder. Practically insoluble in water; sparingly soluble in alcohol; freely soluble in acetone. Protect from light.

USP 31 (Clobetasol Propionate). A white to cream crystalline powder. Practically insoluble in water; sparingly soluble in dehydrated alcohol; soluble in acetone, in chloroform, in dimethyl sulfoxide, in dioxan, and in methyl alcohol; slightly soluble in benzene and in ether. Store in airtight containers. Protect from light.

Profile

Clobetasol propionate is a corticosteroid used topically for its glucocorticoid activity (p.1490) in the treatment of various skin disorders. It is usually used as a cream, ointment, gel, scalp application, or foam containing 0.05%.

When applied topically, particularly to large areas, when the skin is broken, or under occlusive dressings, corticosteroids may be absorbed in sufficient amounts to cause systemic effects (p.1490). The effects of topical corticosteroids on the skin are described on p.1492. For recommendations concerning the correct use of corticosteroids on the skin, and a rough guide to the clinical potencies of topical corticosteroids, see p.1497.

◊ References.

1. Campisi G, *et al.* A new delivery system of clobetasol-17-propionate (lipid-loaded microspheres 0.025%) compared with a conventional formulation (lipophilic ointment in a hydrophilic phase 0.025%) in topical treatment of atrophic/erosive oral lichen planus: a phase IV, randomized, observer-blinded, parallel group clinical trial. *Br J Dermatol* 2004; **150:** 984–90.
2. Jarratt M, *et al.* Clobetasol propionate shampoo 0.05%: a new option to treat patients with moderate to severe scalp psoriasis. *J Drugs Dermatol* 2004; **3:** 367–73.
3. Reygagne P, *et al.* Clobetasol propionate shampoo 0.05% and calcipotriol solution 0.005%: a randomized comparison of efficacy and safety in subjects with scalp psoriasis. *J Dermatol Treat* 2005; **16:** 31–6.
4. Breneman D, *et al.* Clobetasol propionate 0.05% lotion in the treatment of moderate to severe atopic dermatitis: a randomized evaluation versus clobetasol propionate emollient cream. *J Drugs Dermatol* 2005; **4:** 330–6.
5. Lowe N, *et al.* Clobetasol propionate lotion, an efficient and safe alternative to clobetasol propionate emollient cream in subjects with moderate to severe plaque-type psoriasis. *J Dermatol Treat* 2005; **16:** 158–64.
6. Reid DC, Kimball AB. Clobetasol propionate foam in the treatment of psoriasis. *Expert Opin Pharmacother* 2005; **6:** 1735–40.
7. Sanchez Regana M, *et al.* Treatment of nail psoriasis with 8% clobetasol nail lacquer: positive experience in 10 patients. *J Eur Acad Dermatol Venereol* 2005; **19:** 573–7.
8. Conrotto D, *et al.* Ciclosporin vs. clobetasol in the topical management of atrophic and erosive oral lichen planus: a double-blind, randomized controlled trial. *Br J Dermatol* 2006; **154:** 139–45.
9. Vena GA, *et al.* Clobetasol propionate 0.05% in a novel foam formulation is safe and effective in the short-term treatment of patients with delayed pressure urticaria: a randomized, double-blind, placebo-controlled trial. *Br J Dermatol* 2006; **154:** 353–6.

Preparations

BP 2008: Clobetasol Cream; Clobetasol Ointment;
USP 31: Clobetasol Propionate Cream; Clobetasol Propionate Ointment; Clobetasol Propionate Topical Solution.

Proprietary Preparations (details are given in Part 3)

Arg.: Cantril†; Clobesol; Clobex; Dermaclob; Dermadex; Dermexane; Perfracort; Ribatra; Salac; ***Austria:*** Dermovate; ***Belg.:*** Dermovate; ***Braz.:*** Clob-X; Clobesol; Cortalen C; Dermacare; Propiosol; Psorex; Psorin; Therapsor; ***Canad.:*** Clobex; Dermasone†; Dermovate; ***Chile:*** Alticort; Clob-X; Clodavan; Cortopic; Dermovate; Koniderm; Lobevat†; Xinder; ***Cz.:*** Clobex; Dermovate; ***Denm.:*** Dermovat; ***Fin.:*** Dermovat; ***Fr.:*** Dermoval; ***Ger.:*** Clobegalen; Dermoxin; Dermoxinale; Karison; ***Gr.:*** Butavate; Clarelux; Rubocort; ***Hong Kong:*** Clobasol; Clobesol; Clobex; Dermasone†; Dermo; Dermovate; Dhabesol; Eurobetsol; Medodermone; Uniderm; ***Hung.:*** Closanasol; Dermovate; ***India:*** Cloderm; Lobate; Tenovate; Topifort; ***Indon.:*** Bersol; Closol; Dermovate; Elopro; Forderm; Ikaderm; Kloderma; Klonat; Lamodex; Lotasbat; Primaderm; Psoriderm; ***Irl.:*** Dermovate; ***Israel:*** Dermovate; ***Ital.:*** Clobesol; ***Malaysia:*** Betasol†; Clobet; Cloderm; Dermapro†; Dermosol; Dermovate; Dhabesol; Lobesol†; Uniderm; Univate†; ***Mex.:*** Clobesol; Dermatovate; Lobevat; ***Neth.:*** Clarelux; Clobex; Dermovate; Olux†; ***Norw.:*** Dermovat; ***NZ:*** Dermol; ***Philipp.:*** Clonate; Closderm; Dermovate; Glevate; ***Pol.:*** Clobederm; Dermklobal; Dermovate; Novate; ***Port.:*** Clarelux; Dermovate; Etrivex; ***Rus.:*** Dermovate (Дермовейт); ***S.Afr.:*** Dermovate; Dovate; Xenovate; ***Singapore:*** Clobeson†; Cloderm; Dermosol; Dermovate; Dhabesol; Medodermone; Powercort; Uniderm; Univate; ***Spain:*** Clovate; Decloban; ***Swed.:*** Dermovat; ***Switz.:*** Dermovate; ***Thai.:*** Betasol; Clinoderm; Clobasone; Clobet; Clobetate; Cloderm; Clonovate; Cotaso; Dermasil†; Dermovate; Mededermone†; P-Vate; Stivate; Uniderm; ***Turk.:*** Dermovate; Psoderm; Psovate; ***UAE:*** Gamavate; ***UK:*** Clarelux; Dermovate; Etrivex; ***USA:*** Clobex; Cormax; Embeline†; Olux; Temovate; ***Venez.:*** Dermovate.

Multi-ingredient: ***Arg.:*** Clobeplus; Clobesol LA; Dermadex NN; ***India:*** Cloderm GM; Lobate-G; Lobate-GM; Lobate-M; Tenovate G; Tenovate M; ***Philipp.:*** Dermovate-NN; ***Port.:*** Dermovate-NN†; ***Switz.:*** Dermovate-NN; ***UK:*** Dermovate-NN.

Clobetasone Butyrate *(BANM, USAN, rINNM)* ⊗

Butirato de clobetasona; CCI-5537; Clobétasone, butyrate de; Clobetasoni Butiras; Clobetasoni butyras; GR-2/1214; Klobetasonbutyrat; Klobetason-butyrát; Klobetasonibutyraatti; Klobetazon Bütirat; Klobetazon-butirát; Klobetazono butiratas. 21-Chloro-9α-fluoro-17α-hydroxy-16β-methylpregna-1,4-diene-3,11,20-trione 17-butyrate.

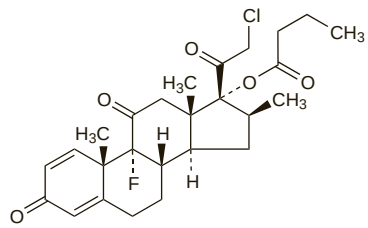
Клобетазона Бутират

$C_{26}H_{32}ClFO_5$ = 479.0.

CAS — 54063-32-0 (clobetasone); 25122-57-0 (clobetasone butyrate).

ATC — D07AB01; S01BA09.

ATC Vet — QD07AB01; QS01BA09.



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

Ph. Eur. 6.2 (Clobetasone Butyrate). A white or almost white powder. Practically insoluble in water; slightly soluble in alcohol; freely soluble in acetone and in dichloromethane. Protect from light.

Profile

Clobetasone butyrate is a corticosteroid used topically for its glucocorticoid activity (p.1490) in the treatment of various skin disorders. It is usually used as a cream or ointment containing 0.05%. When applied topically, particularly to large areas, when the skin is broken, or under occlusive dressings, corticosteroids may be absorbed in sufficient amounts to cause systemic effects (p.1490). The effects of topical corticosteroids on the skin are described on p.1492. For recommendations concerning the correct use of corticosteroids on the skin, and a rough guide to the clinical potencies of topical corticosteroids, see p.1497.

Clobetasone butyrate is also used for inflammatory eye disorders, as eye drops containing 0.1%. Prolonged use of ophthalmic preparations containing corticosteroids has caused raised intraocular pressure and reduced visual function.

Preparations

BP 2008: Clobetasone Cream; Clobetasone Ointment.

Proprietary Preparations (details are given in Part 3)

Arg.: Eumovate; ***Austria:*** Emovate; ***Belg.:*** Eumovate; ***Braz.:*** Eumovate; ***Canad.:*** Eumovate; ***Chile:*** Eumovate†; ***Denm.:*** Emovat; ***Fin.:*** Emovat; ***Ger.:*** Emovate; ***Gr.:*** Rettavate; ***Hong Kong:*** Eumovate; ***India:*** Eumosone; ***Irl.:*** Eumovate; ***Israel:*** Eumovate; ***Ital.:*** Clobet; Eumovate; Visucloben; ***Malaysia:*** Cortoftal†; Eumovate; Euvaderm†; U-Closone; ***Neth.:*** Eumovate; ***Norw.:*** Cloptison†; ***NZ:*** Eumovate; ***Port.:*** Emovate; ***S.Afr.:*** Eumovate; ***Singapore:*** Amisol; Eumovate; ***Spain:*** Cortoftal†; Emovate; ***Swed.:*** Emovat; ***Switz.:*** Emovate; ***Thai.:*** Eumovate†; ***Turk.:*** Eumovate; ***UK:*** Eumovate; ***Venez.:*** Eumovate.

Multi-ingredient: ***Arg.:*** Cloptison-N†; ***India:*** Eumosone-G; Eumosone-M; ***Israel:*** Cicloderm-C; ***Ital.:*** Visucloben Antibiotico; Visucloben Decongestionante; ***UK:*** Trimovate.

Clocortolone Pivalate *(USAN, rINNM)* ⊗

CL-68; Clocortolone, Pivalate de; Clocortoloni Pivalas; Pivalato de clocortolona; SH-863. 9α-Chloro-6α-fluoro-11β,21-dihydroxy-16α-methylpregna-1,4-diene-3,20-dione 21-pivalate.

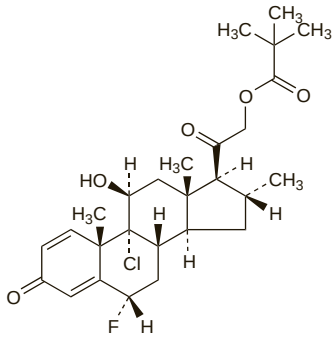
Клокортолона Пивалат

$C_{27}H_{36}ClFO_5$ = 495.0.

CAS — 4828-27-7 (clocortolone); 34097-16-0 (clocortolone pivalate).

ATC — D07AB21.

ATC Vet — QD07AB21.



Pharmacopoeias. In *US*.

USP 31 (Clocortolone Pivalate). A white to yellowish-white, odourless powder. Sparingly soluble in alcohol; soluble in acetone; freely soluble in chloroform and in dioxan; slightly soluble in ether and in benzene. Store in airtight containers. Protect from light.

Profile

Clocortolone pivalate is a corticosteroid used topically for its glucocorticoid activity (p.1490), as a 0.1% cream or ointment, in the treatment of various skin disorders. Clocortolone caproate has been used with the pivalate.

When applied topically, particularly to large areas, where the skin is broken, or under occlusive dressings, corticosteroids may be absorbed in sufficient amounts to cause systemic effects (p.1490). The effects of topical corticosteroids on the skin are described on p.1492. For recommendations concerning the correct use of corticosteroids on the skin, see p.1497.

Preparations

USP 31: Clocortolone Pivalate Cream.

Proprietary Preparations (details are given in Part 3)
Austria: Glimbal; ***Ger.:*** Kaban; Kabanimat; ***USA:*** Cloderm.

Multi-ingredient: ***Ger.:*** Corto-Tavegil†; Crino-Kaban N†; Procto-Kaban†.

Cloprednol *(BAN, USAN, rINN)* ⊗

Cloprednolum; RS-4691. 6-Chloro-11β,17α,21-trihydroxypregna-1,4,6-triene-3,20-dione.

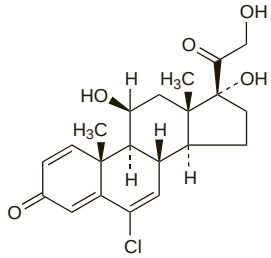
Клопреднол

$C_{21}H_{25}ClO_5$ = 392.9.

CAS — 5251-34-3.

ATC — H02AB14.

ATC Vet — QH02AB14.



Profile

Cloprednol is a corticosteroid with mainly glucocorticoid activity (p.1490); the anti-inflammatory activity of 2.5 mg of cloprednol is equivalent to about 5 mg of prednisolone. Cloprednol is given orally in various disorders for which corticosteroid therapy is helpful (p.1495), in usual doses ranging from 1.25 to 12.5 mg daily.

Preparations

Proprietary Preparations (details are given in Part 3)
Ger.: Syntestan.

Corticorelin *(rINN)* ⊗

Corticoliberin; Corticorelina; Corticoréline; Corticorelinum; Corticotrophin-releasing Hormone; Corticotropin-releasing Factor; CRF; CRH; HLC; Hormona liberadora de corticotropina.

Кортикорелин

$C_{208}H_{344}N_{60}O_{63}S_2$ = 4757.5 (human);
$C_{205}H_{339}N_{59}O_{63}S$ = 4670.3 (ovine).

CAS — 86784-80-7 (corticorelin (human)); 79804-71-0 (corticorelin (ovine)).

ATC — V04CD04.

ATC Vet — QV04CD04.

Corticorelin Triflutate *(rINNM)* ⊗

Corticorelin Trifluoroacetate; Corticoréline, Triflutate de; Corticorelini Triflutas; Triflutato de corticorelina.

Кортикорелина Трифлутат

$C_{205}H_{339}N_{59}O_{63}S.xC_2HF_3O_2$ (ovine).

CAS — 121249-14-7 (corticorelin ovine triflutate).

ATC — V04CD04.

ATC Vet — QV04CD04.

NOTE. Corticorelin Ovine Triflutate is *USAN*.

Adverse Effects

Flushing of the face, neck, and upper chest, and mild dyspnoea may follow intravenous injection of corticorelin, and last for about 3 to 5 minutes. Prolonged flushing, tachycardia, hypotension, and chest tightness have been reported after large doses.

Effects on the cardiovascular system. Loss of consciousness, lasting for 10 seconds to 5 minutes, occurred in 3 patients, 2 of whom had Cushing's disease and one who had secondary adrenal insufficiency, after intravenous injection of corticorelin 200 micrograms.[1] The 2 patients with Cushing's disease had a slight accompanying fall in blood pressure. In a fourth patient, receiving corticosteroid and thyroid hormone replacement therapy, injection of corticorelin was associated with a sharp fall in systolic blood pressure and subsequent asystole. These serious adverse effects were not noted by others[2,3] and were variously attributed to impurities,[2] high dosage,[2] vasovagal syncope,[3] or to the fact that the corticorelin used in the study was of ovine rather than human origin.[3] The authors of the original study[1] have since stated[4] that lowering of the dose from 200 micrograms given intravenously over 10 seconds to 100 micrograms over 60 seconds has stopped serious adverse effects but that ovine corticorelin was still preferred because of its longer duration of action and lower incidence of hypotensive adverse effects. There has, however, been a further report of chest pain accompanied by a fall in blood pressure in a patient receiving corticorelin at a dose of 100 micrograms.[5]

1. Hermus A, *et al.* Serious reactions to corticotropin-releasing factor. *Lancet* 1983; **i:** 776.
2. Schulte HM, *et al.* Safety of corticotropin-releasing factor. *Lancet* 1983; **i:** 1222.
3. Oppermann D. Safety of human and ovine corticotropin-releasing hormone. *Lancet* 1986; **ii:** 1031–2.
4. Hermus ARMM, *et al.* Safety of human and ovine corticotropin-releasing hormone. *Lancet* 1986; **ii:** 1032–3.
5. Paloma VC, *et al.* Chest pain after intravenous corticotropin-releasing hormone. *Lancet* 1989; **i:** 222.

Uses and Administration

Corticorelin is a polypeptide hypothalamic releasing hormone that stimulates the release of corticotropin (p.1523) from the anterior pituitary. It is used in the differential diagnosis of Cushing's syndrome (p.2344) and other adrenal disorders. Corticorelin is usually given as the triflutate, but doses are expressed in terms of corticorelin (human or ovine). A single dose of 100 micrograms, or of 1 microgram/kg, is given by intravenous injection over 30 seconds. Higher and more rapid doses have been used but may be associated with an increased risk of adverse effects (see above).

Corticorelin acetate is under investigation in cerebral oedema.

Administration. Corticorelin was well absorbed after subcutaneous injection and bioavailability was calculated to be about 60 to 70%; absorption was slower with high doses, suggesting that it may be a saturable process. Given the retention of bioactivity, the subcutaneous route was considered an attractive alternative to intravenous use.[1]

1. Angst MS, *et al.* Pharmacokinetics, cortisol release, and hemodynamics after intravenous and subcutaneous injection of human corticotropin-releasing factor in humans. *Clin Pharmacol Ther* 1998; **64:** 499–510.

Diagnosis and testing. Corticorelin may be used in the diagnosis of adrenal disorders including Cushing's syndrome (p.2344). In the initial diagnosis of Cushing's syndrome, a dexamethasone-corticorelin test may be used to identify pseudo-Cushing's conditions such as depression or alcoholism in patients with mild hypercortisolism and equivocal results on other diagnostic tests. This combination is reportedly more accurate than either alone,[1] but it is cumbersome and difficult to carry out on an ambulatory basis.[2]

When a diagnosis of ACTH-dependent Cushing's syndrome has been established, corticorelin may be used for differential diagnosis of the subtype. Patients with pituitary Cushing's syndrome have an exaggerated increase in plasma-corticotropin and plasma-cortisol concentrations in response to corticorelin, whereas those with adrenal or ectopic syndrome generally have no response.[3,4] The corticorelin stimulation test is of comparable diagnostic efficacy to the dexamethasone suppression test,[5,6] although false results have been obtained with both tests.[2,5,7] Again, a combination of the dexamethasone and corticorelin tests is reportedly more accurate than either alone.[6] The most reliable test to distinguish between pituitary and nonpituitary forms of Cushing's syndrome is to measure the difference between central and peripheral concentrations of ACTH after giving corticorelin.[2] However, this requires sampling of central (petrosal) venous blood, an invasive procedure needing considerable expertise.

1. Yanovski JA, *et al.* Corticotropin-releasing hormone stimulation following low-dose dexamethasone administration: a new test to distinguish Cushing's syndrome from pseudo-Cushing's states. *JAMA* 1993; **269:** 2232–8.
2. Raff H, Findling JW. A physiologic approach to diagnosis of the Cushing syndrome. *Ann Intern Med* 2003; **138:** 980–91.
3. Chrousos GP, *et al.* The corticotropin-releasing factor stimulation test: an aid in the evaluation of patients with Cushing's syndrome. *N Engl J Med* 1984; **310:** 622–6.
4. Newell-Price J, *et al.* Optimal response criteria for the human CRH test in the differential diagnosis of ACTH-dependent Cushing's syndrome. *J Clin Endocrinol Metab* 2002; **87:** 1640–5.
5. Hermus AR, *et al.* The corticotropin-releasing-hormone test versus the high-dose dexamethasone test in the differential diagnosis of Cushing's syndrome. *Lancet* 1986; **ii:** 540–4.
6. Nieman LK, *et al.* The ovine corticotropin-releasing hormone stimulation test and the dexamethasone suppression test in the differential diagnosis of Cushing's syndrome. *Ann Intern Med* 1986; **105:** 862–7.
7. Arnaldi G, *et al.* Diagnosis and complications of Cushing's syndrome: a consensus statement. *J Clin Endocrinol Metab* 2003; **88:** 5593–5602.

Preparations

Proprietary Preparations (details are given in Part 3)
Austria: CRH; ***Fr.:*** Stimu-ACTH; ***Ger.:*** Cortirel; CRH; ***Neth.:*** CRH; ***USA:*** Acthrel.

Corticotropin *(BAN, rINN)* ⊗

ACTH; Adrenocorticotrophic Hormone; Adrenocorticotrophin; Corticotrophin; Corticotropina; Corticotropine; Corticotropinum; Kortikotropiini; Kortikotropin.

Кортикотропин

CAS — 9002-60-2 (corticotropin); 9050-75-3 (corticotropin zinc hydroxide); 8049-55-6 (corticotropin zinc hydroxide).

ATC — H01AA01.

ATC Vet — QH01AA01.

Pharmacopoeias. In *US* as preparations for injection.

Units

5 units of porcine corticotropin for bioassay are contained in about 50 micrograms (with lactose 5 mg) in one ampoule of the third International Standard (1962).

Adverse Effects

Corticotropin stimulates the adrenals to produce cortisol (hydrocortisone) and mineralocorticoids; it therefore has the potential to produce similar adverse glucocorticoid and mineralocorticoid effects to those of the corticosteroids (see p.1490). In particular, its mineralocorticoid properties can produce marked sodium and water retention; considerable potassium loss may also occur.

Corticotropin can induce sensitisation, and severe hypersensitivity reactions, including anaphylaxis, may occur. This is generally considered to be due to the porcine component of the peptide.

Whereas corticosteroids replace endogenous cortisol (hydrocortisone) and thereby induce adrenal atrophy, corticotropin's stimulant effect induces hypertrophy. Nevertheless, the ability of the hypothalamic-pituitary-adrenal axis to respond to stress is still reduced, and abrupt withdrawal of corticotropin may result in symptoms of adrenal insufficiency (see Withdrawal, below).

◊ Reports of adverse effects in children given corticotropin for infantile spasms.

1. Riikonen R, Donner M. ACTH therapy in infantile spasms: side effects. *Arch Dis Child* 1980; **55:** 664–72.
2. Hanefeld F, *et al.* Renal and pancreatic calcification during treatment of infantile spasms with ACTH. *Lancet* 1984; **i:** 901.
3. Riikonen R, *et al.* Disturbed calcium and phosphate homeostasis during treatment with ACTH of infantile spasms. *Arch Dis Child* 1986; **61:** 671–6.
4. Perheentupa J, *et al.* Adrenocortical hyporesponsiveness after treatment with ACTH of infantile spasms. *Arch Dis Child* 1986; **61:** 750–3.