twice or four times a day in patients with seasonal allergic conjunctivitis. *J Ocul Pharmacol Ther* 2004; **20:** 139–50.
8. Yahata H, *et al.* Prophylactic effect of pemirolast, an antiallergic agent, against hypersensitivity reactions to paclitaxel in patients with ovarian cancer. *Int J Cancer* 2006; **118:** 2636–8.

Administration in children. Pemirolast potassium may be used in the management of asthma in children in the following oral doses:

- 1 to 4 years: 2.5 mg twice daily after food
- 5 to 10 years: 5 mg twice daily after food
- 11 years and above: use adult doses, see above

For allergic rhinitis, the above doses are halved.

Pemirolast potassium 0.1% eye drops can be used four times daily in children over 3 years with allergic conjunctivitis.

Preparations

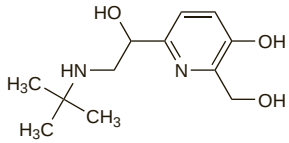
Proprietary Preparations (details are given in Part 3)
Hong Kong: Pemirox; ***Indon.:*** Alegysal; ***Jpn:*** Alegysal; ***Philipp.:*** Alegysal; ***Thai.:*** Pemirox; ***USA:*** Alamast.

Pirbuterol *(BAN, rINN)* ⊗

Pirbutérol; Pirbuteroli; Pirbuterolum; Pyrbuterol. 2-*tert*-Butylamino-1-(5-hydroxy-6-hydroxymethyl-2-pyridyl)ethanol.

Пирбутерол

$C_{12}H_{20}N_2O_3$ = 240.3.
CAS — 38677-81-5.
ATC — R03AC08; R03CC07.
ATC Vet — QR03AC08; QR03CC07.



Pirbuterol Acetate *(BANM, USAN, rINNM)* ⊗

Acetato de pirbuterol; CP-24314-14; Pirbutérol, Acétate de; Pirbuteroli Acetas; Pyrbuterol Acetate.

Пирбутерола Ацетат

$C_{12}H_{20}N_2O_3,C_2H_4O_2$ = 300.4.
CAS — 65652-44-0.
ATC — R03AC08; R03CC07.
ATC Vet — QR03AC08; QR03CC07.

Pirbuterol Hydrochloride *(BANM, USAN, rINNM)* ⊗

CP-24314-1; Hidrocloruro de pirbuterol; Pirbutérol, Chlorhydrate de; Pirbuteroli Hydrochloridum; Pyrbuterol Hydrochloride.

Пирбутерола Гидрохлорид

$C_{12}H_{20}N_2O_3,2HCl$ = 313.2.
CAS — 38029-10-6.
ATC — R03AC08; R03CC07.
ATC Vet — QR03AC08; QR03CC07.

Profile

Pirbuterol is a direct-acting sympathomimetic with mainly beta-adrenoceptor stimulant activity and a selective action on $beta_2$ receptors (a $beta_2$ agonist). It has properties similar to those of salbutamol (p.1131).

Pirbuterol is used for its bronchodilating properties. It is given as the acetate in the management of reversible airways obstruction, as in asthma (p.1108) and in some patients with chronic obstructive pulmonary disease (p.1112). On inhalation, pirbuterol exerts an effect within 10 minutes, which is reported to last at least 5 hours.

Pirbuterol is given by inhalation as the acetate but doses are expressed in terms of the base: pirbuterol acetate 250 micrograms is equivalent to about 200 micrograms of pirbuterol. It is given via a metered-dose aerosol in a usual dose equivalent to pirbuterol 200 to 400 micrograms (1 to 2 inhalations) as required but not more often than every four hours. A total daily dose of 2.4 mg (12 inhalations) should not be exceeded. In patients with asthma, 'as-required' beta agonist therapy is preferable to regular use. An increased need for, or decreased duration of effect of, pirbuterol indicates deterioration of asthma control and the need for review of therapy.

Pirbuterol has also been given orally as the hydrochloride.

Preparations

Proprietary Preparations (details are given in Part 3)
Austria: Exirel†; ***Fr.:*** Maxair; ***Switz.:*** Maxair†; ***USA:*** Maxair.

Pitrakinra *(rINN)*

Pitrakinrum. L-Methionyl-[121-aspartic acid,124-aspartic acid]interleukin-4.

Питракинра

Profile

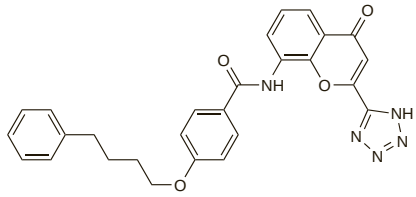
Pitrakinra is a dual interleukin-4 and -13 receptor antagonist that is under investigation in the treatment of asthma.

Pranlukast *(BAN, rINN)*

ONO-1078; Pranlukastum. *N*-[4-Oxo-2-(1*H*-tetrazol-5-yl)-4*H*-1-benzopyran-8-yl]-*p*-(4-phenylbutoxy)benzamide.

Пранлукаст

$C_{27}H_{23}N_5O_4$ = 481.5.
CAS — 103177-37-3.
ATC — R03DC02.
ATC Vet — QR03DC02.



Profile

Pranlukast is a selective antagonist of the leukotriene C_4, D_4, and E_4 receptors with similar properties to zafirlukast (p.1150). It is used in the management of asthma (p.1108) and allergic rhinitis (p.565), at a usual oral dose of pranlukast hydrate 225 mg twice daily. For details of doses in children, see below.

◊ References.

1. Tamaoki J, *et al.* Leukotriene antagonist prevents exacerbation of asthma during reduction of high-dose inhaled corticosteroid. *Am J Respir Crit Care Med* 1997; **155:** 1235–40.
2. Barnes NC, *et al.* Pranlukast, a novel leukotriene receptor antagonist: results of the first European, placebo-controlled, multicentre clinical study in asthma. *Thorax* 1997; **52:** 523–7.
3. Grossman J, *et al.* Results of the first US double-blind, placebo-controlled, multicenter clinical study in asthma with pranlukast, a novel leukotriene receptor antagonist. *J Asthma* 1997; **34:** 321–8.
4. Keam SJ, *et al.* Pranlukast: a review of its use in the management of asthma. *Drugs* 2003; **63:** 991–1019.

Administration in children. Children with asthma may be given 3.5 mg/kg of pranlukast hydrate orally twice daily. The maximum daily dose is 10 mg/kg, not to exceed the usual adult daily dose of 450 mg (see above).

Churg-Strauss syndrome. Churg-Strauss syndrome has been reported with the use of pranlukast.[1-3] For discussion of the unresolved role of leukotriene antagonists in this disorder and precautions to be observed, see under Zafirlukast, p.1150.

1. Kobayashi S, *et al.* Churg-Strauss syndrome (CSS) in a patient receiving pranlukast. *Clin Rheumatol* 2003; **22:** 491–2.
2. Katsura T, *et al.* The Churg-Strauss syndrome after pranlukast treatment in a patient not receiving corticosteroids. *Ann Intern Med* 2003; **139:** 386–7.
3. Shimbo J, *et al.* Churg-Strauss syndrome and the leukotriene receptor antagonist pranlukast. *Clin Rheumatol* 2005; **24:** 661–2.

Preparations

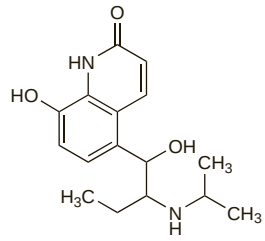
Proprietary Preparations (details are given in Part 3)
Jpn: Onon; ***Mex.:*** Azlaire; ***Venez.:*** Azlaire.

Procaterol Hydrochloride *(BANM, USAN, rINNM)* ⊗

Cl-888; Hidrocloruro de procaterol; OPC-2009; Procatérol, Chlorhydrate de; Procaterol Hydrochloridum; Prokaterolhydroklorid; Prokaterolihydrokloridi. (±)-*erythro*-8-Hydroxy-5-(1-hydroxy-2-isopropylaminobutyl)quinolin-2(1*H*)-one hydrochloride; (±)-8-Hydroxy-5-[(1*R**,2*S**)-1-hydroxy-2-isopropylaminobutyl]-2-quinolone hydrochloride.

Прокатерола Гидрохлорид

$C_{16}H_{22}N_2O_3,HCl$ = 326.8.
CAS — 72332-33-3 (procaterol); 59828-07-8 (procaterol hydrochloride).
ATC — R03AC16; R03CC08.
ATC Vet — QR03AC16; QR03CC08.



(procaterol)

NOTE. Commercial procaterol hydrochloride is the hemihydrate ($C_{16}H_{22}N_2O_3,HCl,½H_2O$ = 335.8).

Pharmacopoeias. *Chin.* and *Jpn* include the hemihydrate.

Profile

Procaterol hydrochloride is a direct-acting sympathomimetic with mainly beta-adrenoceptor stimulant activity selective to $beta_2$ receptors (a $beta_2$ agonist). It has properties similar to those of salbutamol (p.1131) and it is used as a bronchodilator in the management of reversible airways obstruction, as in asthma (p.1108) or in some patients with chronic obstructive pulmonary disease (p.1112). On inhalation it produces an effect within 5 minutes and the effect can last up to 8 hours.

To relieve acute bronchospasm, a usual dose of 20 micrograms of procaterol hydrochloride is given by inhalation from a metered-dose aerosol or dry powder inhaler up to 4 times daily. In patients with asthma, 'as-required' beta agonist therapy is preferable to regular use. An increased need for, or decreased duration of effect of, procaterol indicates deterioration of asthma control and the need for review of therapy. An inhalation solution containing 100 micrograms/mL has been given via a nebuliser in usual doses of 30 to 50 micrograms. Procaterol hydrochloride can also be given orally in doses of 50 micrograms once or twice daily.

Preparations

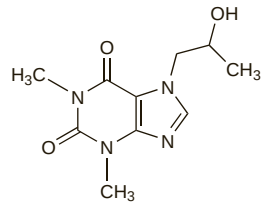
Proprietary Preparations (details are given in Part 3)
Cz.: Lontermin; ***Hong Kong:*** Meptin; ***Hung.:*** Lontermin†; ***Indon.:*** Ataroc; Meptin; ***Ital.:*** Procadil; Propulm; ***Jpn:*** Meptin; ***Malaysia:*** Meptin; ***Philipp.:*** Meptin; ***Port.:*** Onsudil; ***S.Afr.:*** Normalin†; ***Singapore:*** Meptin; ***Spain:*** Onsukil†; ***Thai.:*** Caterol; Meptin.

Proxyphylline *(BAN, rINN)*

Proksifilinas; Proksifylliini; Proxifilina; Proxifillin; Proxifyllin; Proxyfylin; Proxyphyllinum. 7-(2-Hydroxypropyl)-1,3-dimethylxanthine; (*RS*)-1,3-Dimethyl-7-(2-hydroxypropyl)purine-2,6(3*H*,1*H*)-dione; 7-(2-Hydroxypropyl)theophylline.

Проксифиллин

$C_{10}H_{14}N_4O_3$ = 238.2.
CAS — 603-00-9.
ATC — R03DA03.
ATC Vet — QR03DA03.



Pharmacopoeias. In *Eur.* (see p.vii).
Ph. Eur. 6.2 (Proxyphylline). A white or almost white, crystalline powder. Very soluble in water; soluble in alcohol. Protect from light.

Profile

Proxyphylline is a derivative of theophylline (p.1140) which is used as a bronchodilator and for its cardiovascular properties. Proxyphylline is readily absorbed from the gastrointestinal tract and it is not converted to theophylline in the body.

Preparations

Proprietary Preparations (details are given in Part 3)
Mex.: Purofilina†.

Multi-ingredient: ***Austria:*** Asthma Efeum; Omega; ***Braz.:*** Santussal; ***Ger.:*** Antihypertonicum S; ***Spain:*** Novofilin†.