

fluid retention or adverse effect on renal function or serum-lipids. In these reports, intramuscular doses of nandrolone decanoate have ranged from 100 mg once every 2 weeks¹ up to 600 mg weekly,² and treatment has generally been given for 12 to 24 weeks.

- Gold J, *et al.* Safety and efficacy of nandrolone decanoate for treatment of wasting in patients with HIV infection. *AIDS* 1996; **10**: 745–52.
- Sattler FR, *et al.* Effects of pharmacological doses of nandrolone decanoate and progressive resistance training in immunodeficient patients infected with human immunodeficiency virus. *J Clin Endocrinol Metab* 1999; **84**: 1268–76.
- Storer TW, *et al.* A randomized, placebo-controlled trial of nandrolone decanoate in human immunodeficiency virus-infected men with mild to moderate weight loss with recombinant human growth hormone as active reference treatment. *J Clin Endocrinol Metab* 2005; **90**: 4474–82.
- Mulligan K, *et al.* Effect of nandrolone decanoate therapy on weight and lean body mass in HIV-infected women with weight loss: a randomized, double-blind, placebo-controlled, multicenter trial. *Arch Intern Med* 2005; **165**: 578–85.
- Gold J, *et al.* Effects of nandrolone decanoate compared with placebo or testosterone on HIV-associated wasting. *HIV Med* 2006; **7**: 146–55.
- Johansen KL, *et al.* Anabolic effects of nandrolone decanoate in patients receiving dialysis: a randomized controlled trial. *JAMA* 1999; **281**: 1275–81.
- Johansen KL, *et al.* Effects of resistance exercise training and nandrolone decanoate on body composition and muscle function among patients who receive hemodialysis: a randomized, controlled trial. *J Am Soc Nephrol* 2006; **17**: 2307–14.
- Eiam-Ong S, *et al.* Nutritional effect of nandrolone decanoate in predialysis patients with chronic kidney disease. *J Ren Nutr* 2007; **17**: 173–8.

Male contraception. Preliminary findings showed that nandrolone suppressed spermatogenesis,^{1–3} suggesting potential as a male contraceptive (p.2070), but later studies seem to have favoured other androgens.

- Schürmeyer T, *et al.* Reversible azoospermia induced by the anabolic steroid 19-nortestosterone. *Lancet* 1984; **i**: 417–20.
- Knuth UA, *et al.* Combination of 19-nortestosterone-hexyloxyphenyl-propionate (Anadur) and depot-medroxyprogesterone-acetate (Climovir) for male contraception. *Fertil Steril* 1989; **51**: 1011–18.
- WHO Task Force on Methods for the Regulation of Male Fertility. Comparison of two androgens plus depot-medroxyprogesterone acetate for suppression to azoospermia in Indonesian men. *Fertil Steril* 1993; **60**: 1062–8.

Preparations

BP 2008: Nandrolone Decanoate Injection; Nandrolone Phenylpropionate Injection;

USP 31: Nandrolone Decanoate Injection; Nandrolone Phenylpropionate Injection.

Proprietary Preparations (details are given in Part 3)

Arg.: Deca-Durabolin; Keratyl†; **Austral.:** Deca-Durabolin; **Austria:** Deca-Durabolin; **Belg.:** Deca-Durabolin; **Braz.:** Deca-Durabolin; **Canad.:** Deca-Durabolin; **Chile:** Anapolina; Deca-Durabolin; Nandrosande; **Cz.:** Deca-Durabolin†; Keratyl†; Superanabolon; **Fin.:** Deca-Durabolin; **Fr.:** Keratyl†; **Ger.:** Deca-Durabolin; Keratyl†; **Gr.:** Anabolone Depot; Deca-Durabolin; Extrabolone; Nurezan†; **Hong Kong:** Deca-Durabolin; **Hung.:** Retabolil; **India:** Deca-Durabolin; Decaneurabol†; Durabolon; Metabol; Metadec; Neurabol; **Indon.:** Deca-Durabolin; **Ital.:** Deca-Durabolin; Dynabolon†; **Malaysia:** Deca-Durabolin; **Mex.:** Deca-Durabolin; **Neth.:** Deca-Durabolin; Durabolon; **Norw.:** Deca-Durabolin; **NZ:** Deca-Durabolin; **Pol.:** Deca-Durabolin; **Port.:** Deca-Durabolin; Nandain†; **Rus.:** Retabolil (Ретаболил); **S.Afr.:** Deca-Durabolin; **Singapore:** Deca-Durabolin; **Spain:** Deca-Durabolin; **Sweden:** Deca-Durabol; **Switz.:** Deca-Durabolin; Keratyl; **Thal.:** Deca-Durabolin; Keratyl; **UK:** Deca-Durabolin; **USA:** Androlone-D; Deca-Durabol; Durabolon; Hybolin; Neo-Durabolic; **Venez.:** Deca-Durabol.

Multi-ingredient: **Arg.:** Dextatop†; **Indon.:** Dextatop†; **Neth.:** Dextatop†.

Nomegestrol Acetate (BANM, rINN)

Acetato de nomegestrol; Nomegestrol acetát; Nomégéstrol, acétate de; Nomegestrol Asetat; Nomegestrolacetat; Nomegestrol acetat; Nomegestrolisetaatti; Nomegestrol acetatas; Nomegestrol-acetát. 17-Hydroxy-6-methyl-19-norpregna-4,6-diene-3,20-dione acetate.

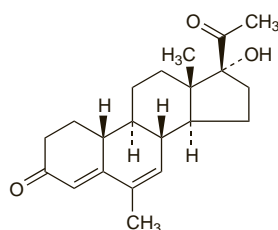
Номегестрола Ацетат

$C_{23}H_{30}O_4 = 370.5$.

CAS — 58691-88-6 (nomegestrol); 58652-20-3 (nomegestrol acetate).

ATC — G03DB04.

ATC Vet — QG03DB04.



(nomegestrol)

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

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

Profile

Nomegestrol acetate is a progestogen structurally related to progesterone (p.2125) that has been used in the treatment of menstrual disorders and as the progestogen component of menopausal HRT (p.2071). Typical oral doses are 5 mg daily for 10 to 14 days of a 28-day cycle. A subdermal implant is under investigation as a long-acting progestogen-only contraceptive.

References

- Coutinho EM, *et al.* Multicenter clinical trial on the efficacy and acceptability of a single contraceptive implant of nomegestrol acetate, Uniplant. *Contraception* 1996; **53**: 121–5.
- Devoto L, *et al.* Hormonal profile, endometrial histology and ovarian ultrasound assessment during 1 year of nomegestrol acetate implant (Uniplant). *Hum Reprod* 1997; **12**: 708–13.
- Barbosa IC, *et al.* Carbohydrate metabolism in sickle cell patients using a subdermal implant containing nomegestrol acetate (Uniplant). *Contraception* 2001; **63**: 263–5.
- Arowojolu AO, Ladipo OA. Nonmenstrual adverse events associated with subdermal contraceptive implants containing nomegestrel [sic] and levonorgestrel. *Afr J Med Med Sci* 2003; **32**: 27–31.
- Barbosa IC, *et al.* Effects of a single Silastic contraceptive implant containing nomegestrol acetate (Uniplant) on endometrial morphology and ovarian function for 1 year. *Contraception* 2006; **74**: 492–7.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Luteny†; **Belg.:** Luteny†; **Braz.:** Luteni; **Chile:** Luteny†; **Cz.:** Luteny†; **Hong Kong:** Luteny†; **Indon.:** Luteny†; **Ital.:** Luteny†; **Mex.:** Luveny†; **Mon.:** Luteny†; **Pol.:** Luteny†; **Port.:** Luteny†; **Turk.:** Luteny†; **Venez.:** Luteny†.

Multi-ingredient: **Ital.:** Naemis; **Mon.:** Naemis; **Neth.:** Naemis; **Port.:** Naemis.

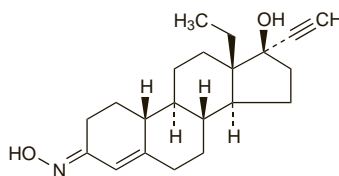
Norelgestromin (BAN, USAN, rINN)

17-Deacetyl norgestimate; Norelgestromini; Norelgestromina; Norelgestromine; Norelgestrominum; RWJ-10553. 13-Ethyl-17-hydroxy-18,19-dinor-17 α -pregn-4-en-20-yn-3-one oxime.

Норэльгестромин

$C_{21}H_{29}NO_2 = 327.5$.

CAS — 53016-31-2.



Profile

Norelgestromin is a progestogen (see Progesterone, p.2125); it is the primary active metabolite of norgestimate (p.2121). Norelgestromin is used as the progestogenic component of a combined contraceptive transdermal patch. A dose of 150 micrograms of norelgestromin is released daily with ethinylestradiol. A new patch is applied each week for 3 weeks of a 4-week cycle. Norelgestromin exposure from such a patch may be greater than that resulting from a comparable oral contraceptive.

References

- Audet M-C, *et al.* Evaluation of contraceptive efficacy and cycle control of a transdermal contraceptive patch vs an oral contraceptive: a randomized controlled trial. *JAMA* 2001; **285**: 2347–54.
- Abrams LS, *et al.* Pharmacokinetics of norelgestromin and ethinyl estradiol from two consecutive contraceptive patches. *J Clin Pharmacol* 2001; **41**: 1232–7.
- Abrams LS, *et al.* Pharmacokinetics of norelgestromin and ethinyl estradiol delivered by a contraceptive patch (Ortho Evra /Evra) under conditions of heat, humidity, and exercise. *J Clin Pharmacol* 2001; **41**: 1301–9.
- Abrams LS, *et al.* Pharmacokinetics of a contraceptive patch (Evra /Ortho Evra) containing norelgestromin and ethinylestradiol at four application sites. *Br J Clin Pharmacol* 2002; **53**: 141–6.
- Burkman RT. The transdermal contraceptive system. *Am J Obstet Gynecol* 2004; **190** (suppl): S49–S53.
- Diveni D, *et al.* Pharmacokinetics and pharmacodynamics of a transdermal contraceptive patch and an oral contraceptive. *J Clin Pharmacol* 2007; **47**: 497–509.
- Jick S, *et al.* Further results on the risk of nonfatal venous thromboembolism in users of the contraceptive transdermal patch compared to users of oral contraceptives containing norgestimate and 35 μ g of ethinyl estradiol. *Contraception* 2007; **76**: 4–7.

Preparations

Proprietary Preparations (details are given in Part 3)

Multi-ingredient: **Arg.:** Evra; **Belg.:** Evra; **Braz.:** Evra; **Canad.:** Evra; **Chile:** Evra; **Cz.:** Evra; **Denm.:** Evra; **Fin.:** Evra; **Fr.:** Evra; **Ger.:** Evra; **Gr.:** Evra; **Hong Kong:** Evra; **Hung.:** Evra; **Isl.:** Evra; **Israel:** Evra; **Ital.:** Evra;

Mex.: Evra; **Neth.:** Evra; **Norw.:** Evra; **Philipp.:** Evra; **Pol.:** Evra; **Port.:** Evra; **Rus.:** Evra (Espan); **S.Afr.:** Evra; **Singapore:** Evra; **Spain:** Evra; **Sweden:** Evra; **Switz.:** Evra; **Thal.:** Evra; **UK:** Evra; **USA:** Ortho Evra; **Venez.:** Evra.

Norethandrolone (BAN, rINN) ⓧ

17 α -Ethyl-17 β -hydroxyestr-4-en-3-one; 17 β -Hydroxy-19-nor-17 α -pregn-4-en-3-one; Noretandrolona; Noréthandrolone; Norethandrolonum.

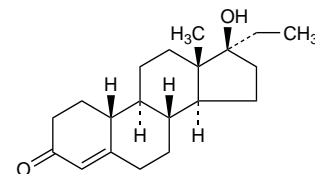
Норэтандролон

$C_{20}H_{30}O_2 = 302.5$.

CAS — 52-78-8.

ATC — A14AA09.

ATC Vet — QAI4AA09.



Adverse Effects and Precautions

As for androgens and anabolic steroids in general (see Testosterone, p.2130). As with other 17 α -alkylated compounds, norethandrolone may produce hepatotoxicity and liver function should be monitored. It should probably be avoided in patients with impaired liver function, and certainly if this is severe.

Uses and Administration

Norethandrolone is an anabolic steroid with some androgenic properties (see Testosterone, p.2131). It is given in the treatment of aplastic anaemia in an oral dose of 0.25 to 2 mg/kg daily.

Preparations

Proprietary Preparations (details are given in Part 3)

Fr.: Nilevar.

Norethisterone (BAN, pINN)

Ethinyl nortestosterone; Etinil hidroxiestrona; Etinil nortestosterona; Norethindrone; Norethisteron; Noréthistérone; Norethisteronum; Noretindrona; Noretisteron; Noretisterona; Noretisteronas; Noretisterone; Noretisteroni; Noretisterone; Noretisteron; Norepregneninolona; Norepregneninolone; NSC-9564. 17 β -Hydroxy-19-nor-17 α -pregn-4-en-20-yn-3-one.

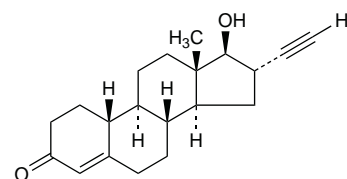
Норэтистерон

$C_{20}H_{26}O_2 = 298.4$.

CAS — 68-22-4.

ATC — G03AC01; G03DC02.

ATC Vet — QG03AC01; QG03DC02.



Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), *Int.*, *Jpn.* and *US*. **Ph. Eur. 6.2** (Norethisterone). A white or yellowish-white crystalline powder. Practically insoluble in water; sparingly soluble in dehydrated alcohol and in acetone; soluble in dichloromethane.

USP 31 (Norethindrone). A white to creamy-white odourless crystalline powder. Practically insoluble in water; sparingly soluble in alcohol; soluble in chloroform and in dioxan; slightly soluble in ether.

Norethisterone Acetate (BANM, pINN)

Acetato de noretisterona; Norethindrone Acetate; Norethisteron-acetát; Noréthistérone, acétate de; Noretisteroni acetat; Noretisteron Asetat; Noretisteronacetat; Noretisteroniasetaatti; Noretisterono acetatas; Noretisteron-acetát. 17 β -Hydroxy-19-nor-17 α -pregn-4-en-20-yn-3-one acetate; 3-Oxo-19-nor-17 α -pregn-4-en-20-yn-17 β -yl acetate.

Норэтистерона Ацетат

$C_{23}H_{28}O_3 = 340.5$.

CAS — 51-98-9.

ATC — G03AC01; G03DC02.

ATC Vet — QG03AC01; QG03DC02.

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

Ph. Eur. 6.2 (Norethisterone Acetate). A white or yellowish-white crystalline powder. It exhibits polymorphism. Practically insoluble in water; soluble in alcohol; freely soluble in dichloromethane.

romethane. Protect from light.

USP 31 (Norethindrone Acetate). A white to creamy-white odourless crystalline powder. Practically insoluble in water; soluble 1 in 10 of alcohol, 1 in less than 1 of chloroform, 1 in 2 of dioxan, and 1 in 18 of ether.

Norethisterone Enantate (BAN, PINNM)

Enantato de noretisterona; Noretisteron Enantat; Norethindrone Enanthate; Noréthistérone, Enantate de; Norethisterone Enanthate; Norethisterone Heptanoate; Norethisteroni Enantas. 17β-Hydroxy-19-nor-17α-pregn-4-en-20-yn-3-one heptanoate.

Норэтистерона Энантат

C₂₇H₃₈O₃ = 410.6.

CAS — 3836-23-5.

ATC — G03AC01; G03DC02.

ATC Vet — QG03AC01; QG03DC02.

Pharmacopoeias. In *Int*.

Adverse Effects and Precautions

As for progestogens in general (see Progesterone, p.2125). See also under Hormonal Contraceptives, p.2059.

Effects on the liver. There were 6 cases of jaundice among 107 patients with breast cancer treated with high-dose norethisterone acetate;¹ the jaundice was reversible and of an obstructive type. A retrospective analysis² found that the use of norethisterone to prevent menstrual haemorrhage during the thrombocytopenic phase of allogeneic bone marrow transplantation was a significant risk factor for hepatic veno-occlusive disease.

- Langlands AO, Martin WMC. Jaundice associated with norethisterone-acetate treatment of breast cancer. *Lancet* 1975; **i**: 584–5.
- Häggglund H, *et al*. Norethisterone treatment, a major risk-factor for veno-occlusive disease in the liver after allogeneic bone marrow transplantation. *Blood* 1998; **92**: 4568–72.

Porphyria. Norethisterone has been associated with acute attacks of porphyria and is considered unsafe in porphyric patients.

Pregnancy. Abnormalities seen in the offspring of women given norethisterone during pregnancy (either alone or with ethinylestradiol) included: hypospadias,¹ masculinisation of female infants,² meningomyelocele or hydrocephalus,³ and neonatal choreoathetosis associated with oral contraceptive use.⁴ For reference to the fact that oral contraceptives have not generally been associated with teratogenicity, even when used inadvertently in pregnancy, see p.2067.

- Aarskog D. Clinical and cytogenetic studies in hypospadias. *Acta Paediatr Scand* 1970; (suppl 203): 1–62.
- Wilkins L. Masculinization of female fetus due to use of orally given progestins. *JAMA* 1960; **172**: 1028–32.
- Gal I, *et al*. Hormonal pregnancy tests and congenital malformation. *Nature* 1967; **216**: 83.
- Profumo R, *et al*. Neonatal choreoathetosis following prenatal exposure to oral contraceptives. *Pediatrics* 1990; **86**: 648–9.

Venous thromboembolism. For mention that combined oral contraceptives containing older progestogens such as norethisterone appear to be associated with a lower incidence of venous thromboembolism than desogestrel- or gestodene-containing preparations, see p.2063.

Interactions

As for progestogens in general (see Progesterone, p.2126). See also under Hormonal Contraceptives, p.2067.

Pharmacokinetics

Norethisterone is absorbed from the gastrointestinal tract, undergoing first-pass hepatic metabolism, with peak plasma concentrations occurring 1 to 2 hours after an oral dose. It exhibits biphasic pharmacokinetics, an initial distribution phase is followed by a prolonged elimination phase with a half-life of about 8 hours or more. Norethisterone is highly protein bound; about 60% to albumin and 35% to sex hormone binding globulin. Use with an oestrogen increases the proportion bound to sex hormone binding globulin. It is metabolised in the liver with 50 to 80% of a dose being excreted in the urine and up to 40% appearing in the faeces.

Norethisterone acetate is rapidly hydrolysed to norethisterone, principally by intestinal tissue.

After intramuscular injection of norethisterone enantate peak concentrations of norethisterone in plasma are not attained for several days.

Uses and Administration

Norethisterone and its acetate and enantate esters are progestogens (see Progesterone, p.2126) derived from

nortestosterone that have weak oestrogenic and androgenic properties. They are commonly used as **hormonal contraceptives** (see p.2069). Norethisterone and norethisterone acetate are both given orally. Typical daily doses are 350 micrograms for norethisterone and 600 micrograms for norethisterone acetate when used alone, or 0.5 to 1 mg for norethisterone and 1 to 1.5 mg for norethisterone acetate when used with an oestrogen. Norethisterone enantate is given by intramuscular injection; a dose of 200 mg provides contraception for 8 weeks. An intramuscular injection containing norethisterone enantate 50 mg with estradiol valerate 5 mg is given once each month.

Norethisterone and norethisterone acetate are used as the progestogen component of **menopausal HRT** (see p.2076). Typical regimens have included either continuous daily doses of norethisterone 700 micrograms or norethisterone acetate 0.5 to 1 mg, or cyclical regimens of norethisterone or norethisterone acetate 1 mg daily for 10 to 12 days of a 28-day cycle. Norethisterone acetate is also available as transdermal patches supplying 140, 170, or 250 micrograms in 24 hours, that are applied twice weekly for 2 weeks of a 4-week cycle; the lower strengths may also be applied twice weekly on a continuous basis.

Norethisterone and norethisterone acetate may be given orally, usually in divided doses, for the treatment of conditions such as **menorrhagia** (below) and **endometriosis** (p.2091). In menorrhagia (dysfunctional uterine bleeding), norethisterone is given in usual doses of 10 to 15 mg daily and norethisterone acetate in doses of 2.5 to 10 mg daily, in a cyclical regimen. In endometriosis the dosage of norethisterone is 10 to 25 mg daily and of norethisterone acetate 5 to 15 mg daily. Treatment of endometriosis is usually continuous for 4 to 9 months.

Norethisterone has been used in daily doses of up to 15 mg orally in a cyclical regimen in the treatment of **premenstrual syndrome** (p.2099).

In **breast cancer** (p.661) oral doses of up to 60 mg daily of norethisterone have been used.

Administration in children. Although unlicensed in the UK for use in children, the *BNFC* does include norethisterone for the management of delayed puberty (p.2079) in girls. It is added after 12 to 24 months of oestrogen therapy to establish a menstrual cycle and maintain sexual maturation, in an oral dose of 5 mg once daily for the last 7 days of a 28-day cycle.

Menorrhagia. Although cyclical norethisterone has been widely used for menorrhagia (p.2126), it is of limited efficacy during ovulatory cycles¹ being most effective for anovulatory bleeding, which occurs in a minority of women with menorrhagia.

- Lethaby A, *et al*. Cyclical progestogens for heavy menstrual bleeding. Available in The Cochrane Database of Systematic Reviews; Issue 1. Chichester: John Wiley; 2008 (accessed 27/06/08).

Preparations

BP 2008: Estradiol and Norethisterone Acetate Tablets; Estradiol and Norethisterone Tablets; Norethisterone Tablets;

USP 31: Estradiol and Norethindrone Acetate Tablets; Norethindrone Acetate and Ethinyl Estradiol Tablets; Norethindrone Acetate Tablets; Norethindrone and Ethinyl Estradiol Tablets; Norethindrone and Mestranol Tablets; Norethindrone Tablets.

Proprietary Preparations (details are given in Part 3)

Arg.: Ginediot; Primolut-Nor; Selectan; **Austral.:** Locilan; Micronor; Noriday; Primolut N; **Austria:** Duokliman; Micronovum; Primolut-Nor; **Belg.:** Primolut-Nor; **Braz.:** Micronor; Norestin; Primolut-Nor; **Canad.:** Micronor; Norlutate; **Chile:** Primolut-Nor; **Cz.:** Primolut-Nor; **Denm.:** Mini-Pe; **Fin.:** Mini-Pik; Primolut N; Primolut-Nor; **Fr.:** Milligynon; Primolut-Nor; **Ger.:** Gestakadin; Noristerat; Primolut-Nor; **Hong Kong:** Primolut-Nor; **Hung.:** Norcolut; **India:** Cydoreg; Noristerat; Norlut; Primolut N; Syptin; **Indon.:** Anore; Norlut; Primolut N; Regumen; **Ir.:** Noriday; Primolut N; **Israel:** Primolut-Nor; **Ital.:** Primolut-Nor; **Malaysia:** Depocin; Norcolut; Noriday; Noristerat; Primolut N; Sunolut; **Mex.:** Noristerat; Primolut-Nor; **Neth.:** Primolut N; **Norw.:** Concludag; Primolut N; **NZ:** Noriday; Primolut N; **Philipp.:** Noristerat; Primolut N; **Pol.:** Primolut-Nor; **Port.:** Primolut-Nor; **Rus.:** Primolut-Nor; **S. Afr.:** Micronovum; Norlutate; Primolut N; **Singapore:** Norcolut; Noristerat; Primolut N; **Spain:** Primolut-Nor; **Swed.:** Mini-Pe; Primolut-Nor; **Switz.:** Micronovum; Primolut N; **Thai.:** Noristerat; Primolut N; Steron; **Turk.:** Primolut N; **UK:** Micronor; Micronor HRT; Noriday; Noristerat; Primolut N; Utovlan; **USA:** Aygestin; Jolivet; Nor-QD; Ortho Micronor.

Multi-ingredient: **Arg.:** Activelle; Estalis; Estalis Sequi; Estracomb; Estrag-est; Evorel Conti; Evorel Sequi; Klogest; Mesigyna; Trial Combi; Trial Gest; Trial Pak; Trisequens; **Austral.:** Brevinor; Estalis Continuous; Estalis Sequi; Estracomb; Improvil; Klogest; Kliovance; Norimin; Norinyl-I; Synphasic; Trisequens; **Austria:** Activelle; Estalis; Estalis Sequens; Estracomb; Fem-HRT; Klogest; Mericomb; Merigest; Novofem; Ovsymen; Penikliman; Primosiston; Trinovum; Trisequens; **Belg.:** Activelle; Estalis; Estracomb; Klogest; Minessin; Novofem; Ovsymen; Trinovum; Trisequens; **Braz.:**

Activelle; Biofimi; Cidovulon; Cliane; Estalis; Estalis SQ; Estracomb; Estrag-est; Gineane; Ginedic 50 Plus; Klogest; Megestran; Mericomb; Merigest; Mesigyna; Natifa Pro; Noregyna; Primosiston; Suprema; System Conti; System Sequi; Trinovum; Trisequens; **Canad.:** Brevinor; Estalis; Estalis Sequi; Estracomb; Fem-HRT; Loestrin 1.5/30; Minestrin; Ortho 0.5/35; Ortho 1/35; Ortho 7/77; Ortho-Novum 1/50; Select 1/35; Synphasic; **Chile:** Activelle; Cliane; Enadiol Neta; Estracomb; Estrag-est; Ginefolin; Klogest; Mesigyna; Primosiston; Trisequens; **Cz.:** Activelle; Estalis; Estalis Sequi; Estrace Plus; Estrace-C; Estracomb; Estrag-est; Klogest; Mericomb; Menophas; Non-Ovlon; Novofem; Pausogest; Sequidut; System Conti; System Sequi; Triaklim; Trinovum; Trisequens; **Denm.:** Activelle; Econ; Estracomb; Evo-Conti; Evo-Sequi; Femanor; Femasekvens; Klogest; Novofem; Ostranorm; Trinorm; Trinovum; Trisequens; **Fin.:** Activelle; Estalis; Estalis Sekvens; Estracomb; Evorel Conti; Evorel Sequi; Klogest; Mericomb; Merigest; Novofem; Trisequens; **Fr.:** Activelle; Klogest; Miniphas; Novofemme; Ortho-Novum 1/35; Triella; Trisequens; **Ger.:** Activelle; Clonara; Conceplan M; Estalis Sequi; Klogest; Estrag-est; Eve; Gynamon; Klogest N; Mericomb; Merigest; Non-Ovlon; Nora-ratiopharm; Novofem; Ostro-Primolut; Ovsymen; Primosiston; Proston; Sequostat; Sinovula; Synphasic; Trinovum; Trisequens; **Gr.:** Activelle; Estracomb TT5; Klogest; System Conti; System Sequi; **Hong Kong:** Activelle; Brevinor; Estracomb; Klogest; Norimin; Norinyl-I; Novofem; Synphasic; Trinovum; Trisequens; **Hung.:** Activelle; Estracomb; Estrag-est; Klogest; Pausogest; Triaklim; Trisequens; **Ital.:** Activelle; Brevinor; Estalis; Estalis Sequi; Estracomb; Estrapak; Evorel Conti; Klogest; Novofem; Trisequens; **Israel:** Activelle; Evorel Conti; Evorel Sequi; Klogest; Meno-Net; Novofem; Trisequens; **Ital.:** Activelle; Estalis Sequi; Estracomb; Klogest; Trisequens; **Jpn.:** Ortho 777; **Malaysia:** Activelle; Klogest; **Mex.:** Cliane; Estalis; Estracomb; Evorel Conti; Mesigyna; Norace; Norinyl; Nostidin; Ortho-Novum 1/35; Ortho-Novum; **Neth.:** Activelle; Estalis; Estalis Sequi; Estracomb; Klogest; Modicon; Necon; Novofem; Trinovum; Trisequens; **Norw.:** Activelle; Estalis; Estalis Sekvens; Klogest; Novofem; Synfase; Trisequens; **NZ:** Brevinor; Cliane; Estrapak; Klogest; Klovance; Norimin; Norinyl-I; Synphasic; Trisequens; **Philipp.:** Klogest; Micropil; **Pol.:** Activelle; Estalis Sequi; Estracomb; Klogest; Novofem; System Conti; System Sequi; Trinovum; Trisequens; **Port.:** Activelle; Estalis; Estalis Sequi; Estracomb; Klogest; Novofem; Trisequens; **Rus.:** Non-Ovlon (Нон-овлон); Pausogest (Пайзогест); Triaklim (Триаклим); Trisequens (Трисеквенс); **S.Afr.:** Activelle; Brevinor; Estracomb; Estro-Pause N; Evorel Conti; Evorel Sequi; Klogest; Norinyl-I/28; Novofem; Trinovum; Trisequens; **Singapore:** Activelle; Estracomb; Klogest; Trisequens; **Spain:** Absorlent Plus; Activelle; Duofemme; Endomina Plus; Estalis; Estalis Sequi; Estracomb; Merigest; Merigest Sequi; Trisequens; **Swed.:** Activelle; Estalis; Estalis Sekvens; Estracomb; Evorel Micronor; Femanor; Femasekvens; Klogest; Novofem; Ortho-Nett; Novum; Synfase; Trinovum; Trisequens; **Switz.:** Activelle; Estalis; Estalis Sequi; Estracomb; Estrag-est; Klogest N; Mericomb; Merigest; Novofem; Ovsymen; Primosiston; System Conti; System Sequi; Trinovum; Trisequens; **Thai.:** Activelle; Anamari; **Turk.:** Activelle; Estracomb; Klogest; Mesigyna; Trisequens; **UK:** Binovum; Brevinor; Climagest; Climesse; Clinor-ette; Elleste Duet Conti; Elleste-Duet; Estracomb; Estrapak; Evorel Conti; Evorel Pak; Evorel Sequi; FemTab Continuous; Klovance; Kliovance; Loestrin; Norimin; Norinyl-I; Novofem; Nuvelle Continuous; Ovsymen; Synphasic; Trinovum; Trisequens; **USA:** Activelle; Aranelle; Balziva; Brevicon; CombiPatch; Estrostep Fe; Estrostep; Femcon Fe; Fem-HRT; Junel Fe; Lee-na; Loestrin; Loestrin Fe; Modicon; Necon 1/50; Necon 10/11; Necon 0.5/35; 1/35; NEE 1/35; Norinyl I + 35; Norinyl I + 50; Ortho-Novum 1/35; Ortho-Novum 1/50; Ortho-Novum 10/11; Ortho-Novum 7/77; Ovcon 35; Ovcon 50; Tilia Fe; Tri-Legest; Tri-Norinyl; Zenthen; **Venez.:** Cliane; Estracomb; Estrag-est; Mesigyna; Primosiston;

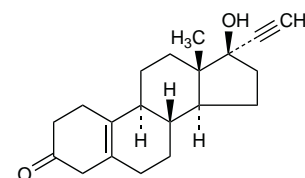
Noretynodrel (BAN, rINN)

Norethynodrel (*USAN*); Noretynodrel; Noretynodreli; Norétyndrel; Noretynodrelum; NSC-15432; SC-4642. 17β-Hydroxy-19-nor-17α-pregn-5(10)-en-20-yn-3-one.

Норэтинодрел

C₂₀H₂₆O₂ = 298.4.

CAS — 68-23-5.



Pharmacopoeias. In *US*.

USP 31 (Norethynodrel). A white or practically white, odourless, crystalline powder. Very slightly soluble in water and in petroleum spirit; sparingly soluble in alcohol; soluble in acetone; freely soluble in chloroform.

Profile

Noretynodrel is a progestogen (see Progesterone, p.2125) structurally related to norethisterone that has been given orally with an oestrogen such as mestranol for the treatment of various menstrual disorders and endometriosis.

Breast feeding. About 1% of an oral dose of radiolabelled noretynodrel was detected in breast milk in a study of 4 women.¹ No adverse effects have been seen in breast-fed infants of mothers given noretynodrel, and the American Academy of Pediatrics considers² that it is therefore usually compatible with breast feeding.

- Laumas KR, *et al*. Radioactivity in the breast milk of lactating women after oral administration of H-noretynodrel. *Am J Obstet Gynecol* 1967; **98**: 411–3.
- American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001; **108**: 776–89. Correction. *ibid.*; 1029. Also available at: <http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/3/776> (accessed 27/06/08)