Resolution solution. Dissolve the contents of a vial of *oxytocin/desmopressin validation mixture CRS* in 500 µl of *water R*.

Column:
- *size*: *l* = 0.12 m, Ø = 4.0 mm;
- *stationary phase*: *octadecylsilyl silica gel for chromatography R* (5 µm).

Mobile phase:
- *mobile phase A*: *0.067 M phosphate buffer solution pH 7.0 R*; filter and degas;
- *mobile phase B*: *acetonitrile for chromatography R*, mobile phase A (50:50 *V/V*); filter and degas.

Time (min)	Mobile phase A (per cent *V/V*)	Mobile phase B (per cent *V/V*)
0 - 4	76	24
4 - 18	76 → 58	24 → 42
18 - 35	58 → 48	42 → 52
35 - 40	48 → 76	52 → 24
40 - 50	76	24

Flow rate: 1.5 ml/min.

Detection: spectrophotometer at 220 nm.

Injection: 50 µl.

Retention time: desmopressin = about 16 min; oxytocin = about 17 min.

System suitability: resolution solution:
- *resolution*: minimum 1.5 between the peaks due to desmopressin and oxytoxin.

Limits:
- *any impurity*: maximum 0.5 per cent;
- *total*: maximum 1.5 per cent;
- *disregard limit*: 0.05 per cent.

Acetic acid (*2.5.34*): 3.0 per cent to 8.0 per cent.

Test solution. Dissolve 20.0 mg of the substance to be examined in a mixture of 5 volumes of mobile phase B and 95 volumes of mobile phase A and dilute to 10.0 ml with the same mixture of mobile phases.

Water (*2.5.32*): maximum 6.0 per cent, determined on 20.0 mg.

Bacterial endotoxins (*2.6.14*): less than 500 IU/mg, if intended for use in the manufacture of parenteral dosage forms without a further appropriate procedure for the removal of bacterial endotoxins.

ASSAY

Liquid chromatography (*2.2.29*) as described in the test for related substances with the following modifications.

Reference solution. Dissolve the contents of a vial of *desmopressin CRS* in *water R* to obtain a concentration of 0.5 mg/ml.

Mobile phase: mobile phase B, mobile phase A (40:60 *V/V*).

Flow rate: 2.0 ml/min.

Retention time: desmopressin = about 5 min.

Calculate the content of desmopressin ($C_{46}H_{64}N_{14}O_{12}S_2$) from the declared content of $C_{46}H_{64}N_{14}O_{12}S_2$ in *desmopressin CRS*.

STORAGE

In an airtight container, protected from light, at a temperature of 2 °C to 8 °C. If the substance is sterile, store in a sterile, airtight, tamper-proof container.

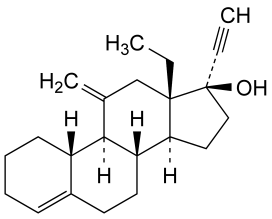
LABELLING

The label states the mass of peptide per container.

01/2008:1717

DESOGESTREL

Desogestrelum



$C_{22}H_{30}O$ M_r 310.5

[54024-22-5]

DEFINITION

13-Ethyl-11-methylidene-18,19-dinor-17α-pregn-4-en-20-yn-17-ol.

Content: 98.0 per cent to 102.0 per cent (dried substance).

CHARACTERS

Appearance: white or almost white, crystalline powder.

Solubility: practically insoluble in water, very soluble in methanol, freely soluble in anhydrous ethanol and in methylene chloride.

IDENTIFICATION

A. Infrared absorption spectrophotometry (*2.2.24*).
Comparison: *desogestrel CRS*.

B. Specific optical rotation (see Tests).

TESTS

Specific optical rotation (*2.2.7*): + 53 to + 57 (dried substance).

Dissolve 0.250 g in *anhydrous ethanol R* and dilute to 25.0 ml with the same solvent.

Related substances. Liquid chromatography (*2.2.29*).

Test solution. Dissolve 20.0 mg of the substance to be examined in 25 ml of *acetonitrile R1* and dilute to 50.0 ml with *water R*.

Reference solution (a). Dissolve 4 mg of *desogestrel for system suitability CRS* (containing impurities A, B, C and D) in 5 ml of *acetonitrile R1* and dilute to 10.0 ml with *water R*.

Reference solution (b). Dilute 1.0 ml of the test solution to 100.0 ml with a mixture of equal volumes of *acetonitrile R1* and *water R*.

Reference solution (c). Dilute 1.0 ml of reference solution (b) to 10.0 ml with a mixture of equal volumes of *acetonitrile R1* and *water R*.

Reference solution (d). Dissolve 20.0 mg of *desogestrel CRS* in 25 ml of *acetonitrile R1* and dilute to 50.0 ml with *water R*.

Column:
- *size*: *l* = 0.25 m, Ø = 4.6 mm,
- *stationary phase*: sterically protected *octadecylsilyl silica gel for chromatography R* (5 µm),
- *temperature*: 50 °C.

Mobile phase: *water R, acetonitrile R1* (27:73 *V/V*).

Flow rate: 1.0 ml/min.

Detection: spectrophotometer at 205 nm.

Injection: 15 µl of the test solution and reference solutions (a), (b) and (c).

Run time: 2.5 times the retention time of desogestrel.

Identification of impurities: use the chromatogram supplied with *desogestrel for system suitability CRS* and the chromatogram obtained with reference solution (a) to identify the peaks due to impurities A, B, C and D.

Relative retention with reference to desogestrel (retention time = about 22 min): impurity E = about 0.2; impurity D = about 0.25; impurity B = about 0.7; impurity A = about 0.95; impurity C = about 1.05.

System suitability: reference solution (a):

– *peak-to-valley ratio*: minimum 2.0, where H_p = height above the baseline of the peak due to impurity C and H_v = height above the baseline of the lowest point of the curve separating this peak from the peak due to desogestrel.

Limits:

– *correction factors*: for the calculation of content, multiply the peak area of the following impurities by the corresponding correction factor: impurity A = 1.8, impurity D = 1.5;

– *impurities A, B, C*: for each impurity, not more than twice the area of the principal peak in the chromatogram obtained with reference solution (c) (0.2 per cent);

– *impurity D*: not more than the area of the principal peak in the chromatogram obtained with reference solution (c) (0.1 per cent);

– *unspecified impurities*: for each impurity, not more than the area of the principal peak in the chromatogram obtained with reference solution (c) (0.10 per cent);

– *total*: not more than 0.5 times the area of the principal peak in the chromatogram obtained with reference solution (b) (0.5 per cent);

– *disregard limit*: 0.5 times the area of the principal peak in the chromatogram obtained with reference solution (c) (0.05 per cent).

Loss on drying (*2.2.32*): maximum 0.5 per cent, determined on 1.000 g by drying *in vacuo* at a pressure not exceeding 2 kPa.

Sulphated ash (*2.4.14*): maximum 0.1 per cent, determined on 1.0 g.

ASSAY

Liquid chromatography (*2.2.29*) as described in the test for related substances with the following modification.

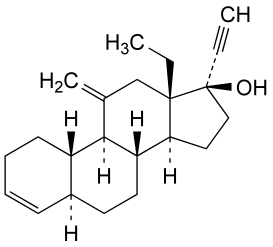
Injection: test solution and reference solution (d).

Calculate the percentage content of $C_{22}H_{30}O$ from the areas of the peaks and the declared content of *desogestrel CRS*.

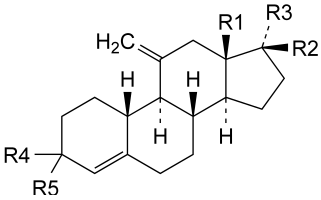
IMPURITIES

Specified impurities: A, B, C, D.

Other detectable impurities (the following substances would, if present at a sufficient level, be detected by one or other of the tests in the monograph. They are limited by the general acceptance criterion for other/unspecified impurities and/or by the general monograph *Substances for pharmaceutical use (2034)*. It is therefore not necessary to identify these impurities for demonstration of compliance. See also *5.10. Control of impurities in substances for pharmaceutical use*): *E.*



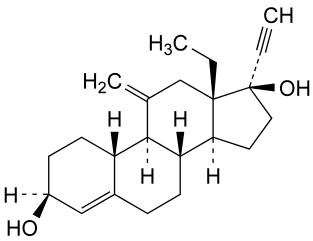
A. 13-ethyl-11-methylidene-18,19-dinor-5α,17α-pregn-3-en-20-yn-17-ol (desogestrel Δ^3-isomer),



B. R1 = CH_3, R2 = OH, R3 = C≡CH, R4 = R5 = H: 11-methylidene-19-nor-17α-pregn-4-en-20-yn-17-ol,

C. R1 = C_2H_5, R2 + R3 = O, R4 = R5 = H: 13-ethyl-11-methylidenegon-4-en-17-one,

D. R1 = C_2H_5, R2 = OH, R3 = C≡CH, R4 + R5 = O: 13-ethyl-17-hydroxy-11-methylidene-18,19-dinor-17α-pregn-4-en-20-yn-3-one,

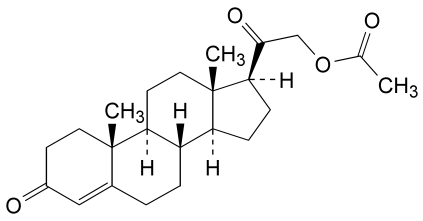


E. 13-ethyl-11-methylidene-18,19-dinor-17α-pregn-4-en-20-yne-3β,17-diol.

01/2008:0322
corrected 6.0

DESOXYCORTONE ACETATE

Desoxycortoni acetas



$C_{23}H_{32}O_4$ M_r 372.5
[56-47-3]

DEFINITION

3,20-Dioxopregn-4-en-21-yl acetate.

Content: 97.0 per cent to 103.0 per cent (dried substance).

CHARACTERS

Appearance: white or almost white, crystalline powder or colourless crystals.