hydrated alumina neutral thoroughly with 15 to 20 mL of hexane, and mix gently. Wash with hexane down to the chromatographic tube, and pack by flowing out the solution. Place sea sand 5 mm in height on it, and fill with hexane up to the surface of sea sand.

(iii) Standard solution: Weigh accurately about 0.025 g of Drostanolone Propionate Reference Standard, previously dried in a desiccator (in vacuum, phosphorus (V) oxide, 50°C) for 2 hours, and dissolve in exactly 10 mL of the internal standard solution.

(iv) Sample stock solution: Pipet a volume of Drostanolone Propionate Injection, equivalent to about 0.05 g of drostanolone propionate ($C_{23}H_{36}O_3$), and add hexane to make exactly 20 mL.

(v) Procedure: Pipet 5 mL of the sample stock solution into the previously prepared chromatographic column, and elute to the surface of sea sand. Wash the inner side of the chromatographic tube with two 5-mL portions of hexane, elute to the surface of sea sand, then elute 120 mL of a mixture of hexane and ethyl acetate (50:1) at the rate of 7 to 8 mL per minute, and discard the effluent solution. Elute 150 mL of a mixture of hexane and ethyl acetate (20:1) at the rate of 7 to 8 mL per minute, and collect the effluent solution. After elution, wash the bottom part of the chromatographic tube with a small quantity of hexane, combine the washing with the effluent solution, and evaporate the solvent at below 30°C. To the residue add exactly 5 mL of the internal standard solution, and use this solution as the sample solution. Proceed with 2 μL each of the sample solution and the standard solution as directed in the Assay under Drostanolone Propionate.

Amount (mg) of drostanolone propionate ($C_{23}H_{36}O_3$)
= amount (mg) of Drostanolone Propionate Reference Standard
$\times \frac{Q_T}{Q_S} \times 2$

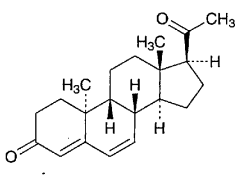
Internal standard solution—A solution of cholesterol in chloroform (1 in 400).

Containers and storage Containers—Hermetic containers, and colored containers may be used.

Storage—Light-resistant.

Dydrogesterone

ジドロゲステロン



$C_{21}H_{28}O_2$: 312.45
9β,10α-Pregna-4,6-diene-3,20-dione [*152-62-5*]

Dydrogesterone, when dried, contains not less than 98.0% and not more than 102.0% of $C_{21}H_{28}O_2$.

Description Dydrogesterone occurs as white to light yellowish white crystals or crystalline powder. It is odorless.

It is freely soluble in chloroform, soluble in acetonitrile, sparingly soluble in methanol and in ethanol (95), slightly soluble in diethyl ether, and practically insoluble in water.

Identification **(1)** To 5 mg of Dydrogesterone add 5 mL of 4-methoxybenzaldehyde-acetic acid TS and 2 to 3 drops of sulfuric acid, and heat in a water bath for 2 minutes: an orange-red color develops.

(2) Determine the absorption spectrum of a solution of Dydrogesterone in methanol (1 in 200,000) as directed under the Ultraviolet-visible Spectrophotometry, and compare the spectrum with the Reference Spectrum: both spectra exhibit similar intensities of absorption at the same wavelengths.

(3) Determine the infrared absorption spectrum of Dydrogesterone, previously dried, as directed in the potassium bromide disk method under the Infrared Spectrophotometry, and compare the spectrum with the Reference Spectrum: both spectra exhibit similar intensities of absorption at the same wave numbers.

Optical rotation $[\alpha]_D^{20}$: -470 – $-500°$ (after drying, 0.1 g, chloroform, 10 mL, 100 mm).

Melting point 167 – 171°C

Purity **(1)** Heavy metals—Proceed with 1.0 g of Dydrogesterone according to Method 2, and perform the test. Prepare the control solution with 2.0 mL of Standard Lead Solution (not more than 20 ppm).

(2) Other steroids—Dissolve 0.010 g of Dydrogesterone in 200 mL of the mobile phase, and use this solution as the sample solution. Pipet 1 mL of the sample solution, add the mobile phase to make exactly 100 mL, and use this solution as the standard solution. Perform the test with 10 μL each of the sample solution and the standard solution as directed under the Liquid Chromatography according to the following conditions. Determine each peak area of these solutions by the automatic integration method: the total area of peaks other than the peak of dydrogesterone from the sample solution is not larger than the peak area of dydrogesterone from the standard solution.

Operating conditions—

Detector: An ultraviolet absorption photometer (wavelength: 280 nm).

Column: A stainless steel column about 4 mm in inside diameter and about 15 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (3 μm in particle diameter).

Column temperature: A constant temperature of about 40°C.

Mobile phase: A mixture of water, ethanol (95) and acetonitrile (53:26:21).

Flow rate: Adjust the flow rate so that the retention time of dydrogesterone is about 12 minutes.

Selection of column: Dissolve 1 mg each of Dydrogesterone and progesterone in 20 mL of the mobile phase. Proceed with 10 μL each of these solutions under the above operating conditions, and calculate the resolution. Use a column giving elution of dydrogesterone and progesterone in this order with the resolution between these peaks being not less than 8. Wavelength is 265 nm.

Detection sensitivity: Adjust the detection sensitivity so that the peak height of dydrogesterone obtained from 10 μL of the standard solution is between 5 mm and 10 mm.

Time span of measurement: About twice as long as the

retention time of dydrogesterone after the solvent peak.

Loss on drying Not more than 0.5% (0.5 g, in vacuum, phosphorus (V) oxide, 24 hours).

Residue on ignition Not more than 0.10% (1 g).

Assay Weigh accurately about 0.05 g of Dydrogesterone, previously dried, and dissolve in methanol to make exactly 100 mL. Pipet 1 mL of this solution, and add methanol to make exactly 100 mL. Determine the absorbance A of this solution at the wavelength of maximum absorption at about 286 nm as directed under the Ultraviolet-visible Spectrophotometry.

$$\text{Amount (mg) of } C_{21}H_{28}O_2 = \frac{A}{845} \times 100{,}000$$

Containers and storage Containers—Tight containers.

Dydrogesterone Tablets

ジドロゲステロン錠

Dydrogesterone Tablets contain not less than 95% and not more than 105% of the labeled amount of dydrogesterone ($C_{21}H_{28}O_2$: 312.45).

Method of preparation Prepare as directed under Tablets, with Dydrogesterone.

Identification **(1)** To a quantity of powdered Dydrogesterone Tablets, equivalent to 0.05 g of Dydrogesterone according to the labeled amount, add 50 mL of methanol, shake well, and filter. Evaporate 5 mL of the filtrate on a water bath to dryness. Proceed with the residue as directed in the Identification (1) under Dydrogesterone.

(2) To 1 mL of the filtrate obtained in (1) add methanol to make 200 mL. Determine the absorption spectrum of this solution as directed under the Ultraviolet-visible Spectrophotometry: it exhibits a maximum between 284 nm and 288 nm.

Dissolution test Perform the test with 1 tablet of Dydrogesterone Tablets at 50 revolutions per minute according to Method 2 under the Dissolution Test, using 900 mL of water as the test solution. Take 20 mL or more of the dissolved solution 30 minutes after starting the test, and filter. Discard the first 10 mL of the filtrate, and use the subsequent as the sample solution. Separately, weigh accurately about 0.05 g of dydrogesterone for assay, previously dried in a desiccator (in vacuum, phosphorus (V) oxide) for 24 hours, and dissolve in methanol to make exactly 100 mL. Pipet 1 mL of this solution, add water to make exactly 100 mL, and use this solution as the standard solution. Determine the absorbances, A_T and A_S, of the sample solution and the standard solution at 296 nm as directed under the Ultraviolet-visible Spectrophotometry.

The dissolution rate of Dydrogesterone Tablets in 30 minutes is not less than 80%.

$$\text{Dissolution rate (\%) with respect to the labeled amount of dydrogesterone } (C_{21}H_{28}O_2) = W_S \times \frac{A_T}{A_S} \times \frac{1}{C} \times 9$$

W_S: Amount (mg) of dydrogesterone for assay.
C: Labeled amount (mg) of dydrogesterone ($C_{21}H_{28}O_2$) in 1 tablet.

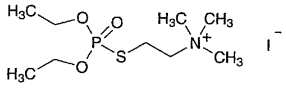
Assay Weigh accurately and powder not less than 20 Dydrogesterone Tablets. Weigh accurately a portion of the powder, equivalent to about 0.01 g of dydrogesterone ($C_{21}H_{28}O_2$), shake well with 50 mL of methanol, and add methanol to make exactly 100 mL. Filter this solution, discard the first 20 mL of the filtrate, pipet the subsequent 5 mL, add methanol to make exactly 100 mL, and use this solution as the sample solution. Separately, weigh accurately about 0.01 g of dydrogesterone for assay, previously dried in a desiccator (in vacuum, phosphorus (V) oxide) for 24 hours, proceed in the same manner as the preparation of the sample solution, and use the solution as the standard solution. Determine the absorbances, A_T and A_S, of the sample solution and the standard solution at 286 nm as directed under the Ultraviolet-visible Spectrophotometry.

$$\text{Amount (mg) of dydrogesterone } (C_{21}H_{28}O_2) = \text{amount (mg) of dydrogesterone for assay} \times \frac{A_T}{A_S}$$

Containers and storage Containers—Tight containers.

Ecothiopate Iodide

ヨウ化エコチオパート



$C_9H_{23}INO_3PS$: 383.23
N-[2-(Diethoxyphosphorylsulfanyl)ethyl]-*N*,*N*,*N*-trimethylammonium iodide [*513-10-0*]

Ecothiopate Iodide contains not less than 95.0% of $C_9H_{23}INO_3PS$, calculated on the dried basis.

Description Ecothiopate Iodide occurs as white crystals or crystalline powder.

It is very soluble in water, freely soluble in methanol, slightly soluble in ethanol (95), and practically insoluble in diethyl ether.

Identification **(1)** Dissolve 0.1 g of Ecothiopate Iodide in 2 mL of water, and add 1 mL of nitric acid: a brown precipitate is formed. To 1 drop of the turbid solution containing this precipitate add 1 mL of hexane, and shake: a light red color develops in the hexane layer.

(2) Heat the suspension of the precipitate obtained in (1) until it becomes colorless, cool, add 10 mL of water, and use this solution as the sample solution. Two mL of the sample solution responds to the Qualitative Tests (2) for phosphate.

(3) Two mL of the sample solution obtained in (2) responds to the Qualitative Tests for sulfate.

pH Dissolve 0.1 g of Ecothiopate Iodide in 40 mL of water: the pH of this solution is between 3.0 and 5.0.

Melting point 116 – 122°C