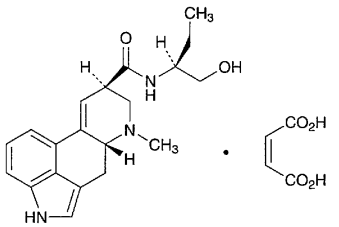
Methylergometrine Maleate

マレイン酸メチルエルゴメトリン



$C_{20}H_{25}N_3O_2.C_4H_4O_4$: 455.50

(8*S*)-9,10-Didehydro-*N*-[(1*S*)-1-(hydroxymethyl)propyl]-6-methylergoline-8-carboxamide monomaleate [*7054-07-1*]

Methylergometrine Maleate, when dried, contains not less than 95.0% and not more than 105.0% of $C_{20}H_{25}N_3O_2.C_4H_4O_4$.

Description Methylergometrine Maleate occurs as a white to pale yellow, crystalline powder. It is odorless.

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

It gradually changes to yellow by light.

Melting point: about 190°C (with decomposition).

Identification (1) A solution of Methylergometrine Maleate (1 in 200) shows a blue fluorescence.

(2) The solution obtained in the Assay develops a deep blue in color. Determine the absorption spectrum of the solution 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) To 5 mL of a solution of Methylergometrine Maleate (1 in 500) add 1 drop of potassium permanganate TS: the red color of the test solution fades immediately.

Optical rotation $[\alpha]_D^{20}$: +44 - +50° (after drying, 0.1 g, water, 20 mL, 100 mm).

Purity Related substances—Conduct this procedure without exposure to daylight, using light-resistant vessels. Dissolve 8 mg of Methylergometrine Maleate in 2 mL of a mixture of ethanol (95) and ammonia solution (28) (9:1), and use this solution as the sample solution. Pipet 1 mL of the sample solution, add a mixture of ethanol (95) and ammonia solution (28) (9:1) to make exactly 100 mL, and use this solution as the standard solution. Perform the test immediately with these solutions as directed under the Thin-layer Chromatography. Spot 10 μL each of the sample solution and the standard solution on a plate of silica gel with fluorescent indicator for thin-layer chromatography, and immediately develop the plate with a mixture of chloroform, methanol and water (75:25:3) to a distance of about 10 cm, and air-dry the plate. Examine under ultraviolet light (main wavelength: 365 nm): the spots other than the principal spot from the sample solution are not more intense than the spot from the standard solution.

Loss on drying Not more than 2.0% (0.2 g, in vacuum, phosphorus (V) oxide, 4 hours).

Assay Weigh accurately about 0.01 g of Methylergometrine Maleate, previously dried, add water to make exactly 250 mL, and use the solution as the sample solution. Separately, weigh accurately about 0.01 g of Ergometrine Maleate Reference Standard, previously dried over silica gel for 4 hours, add water to make exactly 250 mL, and use the solution as the standard solution. Pipet 2 mL each of the sample solution and the standard solution into brown glass-stoppered test tubes, add 4.0 mL each of 4-dimethylaminobenzaldehyde-ferric chloride TS in ice water, and after heating for 10 minutes at 45°C, allow to stand for 20 minutes at room temperature. Perform the test with these solutions as directed under the Ultraviolet-visible Spectrophotometry, using a solution, prepared with 2 mL of water in the same manner, as the blank. Determine the absorbances, A_T and A_S, of the subsequent solutions of the sample solution and the standard solution at 545 nm, respectively.

Amount (mg) of methylergometrine maleate ($C_{20}H_{25}N_3O_2.C_4H_4O_4$)
= amount (mg) of Ergometrine Maleate Reference Standard
$\times \frac{A_T}{A_S} \times 1.0318$

Containers and storage Containers—Tight containers.

Storage—Light-resistant.

Methylergometrine Maleate Tablets

マレイン酸メチルエルゴメトリン錠

Methylergometrine Maleate Tablets contain not less than 90% and not more than 110% of the labeled amount of $C_{20}H_{25}N_3O_2.C_4H_4O_4$: 455.50.

Method of preparation Prepare as directed under Tablets, with Methylergometrine maleate.

Identification (1) The sample solution obtained in the Assay shows a blue fluorescence.

(2) The colored solution obtained in the Assay shows a deep blue color. Determine the absorption spectrum of the colored solution as directed under the Ultraviolet-visible Spectrophotometry: it exhibits maxima between 543 nm and 547 nm and between 620 nm and 630 nm.

Dissolution test Perform the test with 1 tablet of Methylergometrine Maleate Tablets at 100 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 through a membrane filter with a pore size of not more than 0.8 μm. Discard the first 10 mL of the filtrate, and use the subsequent as the sample solution, or to exactly V mL of the subsequent add water to make exactly V' mL so that each mL contains about 0.13 μg of methylergometrine maleate ($C_{20}H_{25}N_3O_2.C_4H_4O_4$) according to the labeled amount, and use this solution as the sample solution. Separately, weigh accurately about 0.025 g of methylergometrine maleate for assay, previously dried in a desiccator for 4 hours (in vacuum, phosphorus (V) oxide), and dissolve in water to

make exactly 100 mL. Pipet 5 mL of this solution, add water to make exactly 100 mL, then pipet 1 mL of this solution, add water to make exactly 100 mL, and use this solution as the standard solution. Determine immediately the fluorescence intensities, F_T and F_S, of the sample solution and the standard solution at 338 nm as the excitation wavelength and at 427 nm as the fluorescence wavelength as directed under the Fluorometry.

The dissolution rate of Methylergometrine Maleate Tablets in 30 minutes should be not less than 70%.

Dissolution rate (%) with respect to the labeled amount of methylergometrine maleate ($C_{20}H_{25}N_3O_2.C_4H_4O_4$)

$$= W_S \times \frac{F_T}{F_S} \times \frac{V'}{V} \times \frac{1}{C} \times 0.45$$

W_S: Amount (mg) of methylergometrine maleate for assay.

C: Labeled amount (mg) of methylergometrine maleate ($C_{20}H_{25}N_3O_2.C_4H_4O_4$) in 1 tablet.

Content uniformity Transfer 1 tablet of Methylergometrine Maleate Tablets to a brown glass-stoppered centrifuge tube, add 10 mL of water, shake for 10 minutes vigorously, and disintegrate the tablet. Add 3 g of sodium chloride and 2 mL of ammonia solution (28), add exactly 25 mL of chloroform, and after vigorous shaking for 10 minutes, centrifuge for 5 minutes. Discard the water layer, take the chloroform extracts, add chloroform to make exactly V mL of a solution containing about 5 μg of methylergometrine maleate ($C_{20}H_{25}N_3O_2.C_4H_4O_4$) per mL, and use this solution as the sample solution. Separately, weigh accurately about 1.25 mg of Ergometrine Maleate Reference Standard, previously dried in a desiccator (silica gel) for 4 hours, dissolve in water, and add water to make exactly 100 mL. Pipet 10 mL of this solution into a brown glass-stoppered centrifuge tube, and add 3 g of sodium chloride and 2 mL of ammonia solution (28). Add exactly 25 mL of chloroform, and after vigorous shaking for 10 minutes, centrifuge for 5 minutes. Discard the water layer, take the chloroform extract, and use this solution as the standard solution. Pipet 20 mL each of the sample solution and the standard solution into brown glass-stoppered centrifuge tubes, add immediately exactly 10 mL of dilute 4-dimethylaminobenzaldehyde-ferric chloride TS, respectively, and shake for 5 minutes vigorously. Centrifuge these solutions for 5 minutes, take the water layers, and allow to stand for 1 hour. Perform the test with these solutions as directed under the Ultraviolet-visible Spectrophotometry, using dilute 4-dimethylaminobenzaldehyde-ferric chloride TS as the blank. Determine the absorbances, A_T and A_S, of the subsequent solutions of the sample solution and the standard solution at 545 nm, respectively.

Amount (mg) of methylergometrine maleate ($C_{20}H_{25}N_3O_2.C_4H_4O_4$)
= amount (mg) of Ergometrine Maleate Reference Standard

$$\times \frac{A_T}{A_S} \times \frac{V}{250} \times 1.0318$$

Assay Weigh accurately and powder not less than 20 Methylergometrine Maleate Tablets. Weigh accurately a portion of the powder, equivalent to about 0.3 mg of methylergometrine maleate ($C_{20}H_{25}N_3O_2.C_4H_4O_4$), transfer to a brown separator, add 15 mL of sodium hydrogen carbonate solution (1 in 20), and extract with four 20-mL portions of chloroform. Filter each portion of the chloroform extracts through a pledget of absorbent cotton, previously moistened with chloroform, into another dried, brown separator, combine all the extracts, and use this extract as the sample solution. Separately, weigh accurately about 10 mg of Ergometrine Maleate Reference Standard, previously dried in a desiccator (silica gel) for 4 hours, dissolve in water, and add water to make exactly 100 mL. Pipet 3 mL of this solution, and transfer to a brown separator, proceed in the same manner as the preparation of the sample solution, and use this extract as the standard solution. To each total volume of the sample solution and the standard solution add exactly 25 mL each of dilute *p*-dimethylaminobenzadehyde-ferric chloride TS, and after vigorous shaking for 5 minutes, allow to stand for 30 minutes. Draw off the water layer, centrifuge, and allow to stand for 1 hour. Perform the test with these solutions as directed under the Ultraviolet-visible Spectrophotometry, using dilute 4-dimethylaminobenzaldehyde-ferric chloride TS as the blank. Determine the absorbances, A_T and A_S, of the subsequent solutions of the sample solution and the standard solution at 545 nm, respectively.

Amount (mg) of methylergometrine maleate ($C_{20}H_{25}N_3O_2.C_4H_4O_4$)
= amount (mg) of Ergometrine Maleate Reference Standard

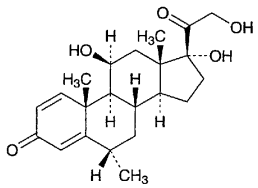
$$\times \frac{A_T}{A_S} \times \frac{3}{100} \times 1.0318$$

Containers and storage Containers—Well-closed containers.

Storage—Light-resistant.

Methylprednisolone

メチルプレドニゾロン



$C_{22}H_{30}O_5$: 374.47

11β,17,21-Trihydroxy-6α-methylpregna-1,4-diene-3,20-dione [*83-43-2*]

Methylprednisolone, when dried, contains not less than 96.0% and not more than 104.0% of $C_{22}H_{30}O_5$.

Description Methylprednisolone occurs as a white, crystalline powder. It is odorless.

It is sparingly soluble in methanol and in 1,4-dioxane, slightly soluble in ethanol (95) and in chloroform, and practically insoluble in water and in diethyl ether.

Melting point: 232 - 240°C (with decomposition).

Identification (1) Add 2 mL of sulfuric acid to 2 mg of Methylprednisolone: a deep red color develops with no fluorescence. Then add 10 mL of water to this solution: the