Mosapride Citrate Powder

Dissolution <6.10> Weigh accurately an amount of Mosapride Citrate Powder, equivalent to about 2.5 mg of anhydrous mosapride citrate ($C_{21}H_{25}ClFN_3O_3 \cdot C_6H_8O_7$) according to the labeled amount, and perform the test at 50 revolutions per minute according to the Paddle method, using 900 mL of 2nd fluid for dissolution test as the dissolution medium. Start the test, withdraw not less than 20 mL of the medium at the specified minute after starting the test, and filter through a membrane filter with a pore size not exceeding 0.45 μm. Discard the first 10 mL of the filtrate, and use the subsequent filtrate as the sample solution. Separately, weigh accurately about 28 mg of Mosapride Citrate RS, previously dried under reduced pressure at 60ºC for 4 hours using phosphorus (V) oxide as a desiccant, and dissolve in the mobile phase to make exactly 100 mL. Pipet 2 mL of this solution, add the mobile phase to make exactly 200 mL, and use this solution as the standard solution. Perform the test with exactly 50 μL each of the sample solution and standard solution as directed under Liquid Chromatography <2.01> according to the following conditions, and determine the peak areas, A_T and A_S, of mosapride of both solutions.

The requirements are met if Mosapride Citrate Powder conforms to the dissolution requirements.

Dissolution rate (%) with respect to the labeled amount of anhydrous mosapride citrate ($C_{21}H_{25}ClFN_3O_3 \cdot C_6H_8O_7$)

$= M_S/M_T \times A_T/A_S \times 1/C \times 9$

M_S: Amount (mg) of Mosapride Citrate RS

M_T: Amount (g) of sample

C: Labeled amount (mg) of anhydrous mosapride citrate ($C_{21}H_{25}ClFN_3O_3 \cdot C_6H_8O_7$) in 1 g

Operating conditions—

Detector: An ultraviolet absorption photometer (wavelength: 274 nm).

Column: A stainless steel column 4.6 mm in inside diameter and 15 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (5 μm in particle diameter).

Column temperature: A constant temperature of about 40ºC.

Mobile phase: Dissolve 8.82 g of trisodium citrate dihydrate in 800 mL of water, adjust the pH to 3.3 with dilute hydrochloric acid, and add water to make 1000 mL. To 240 mL of this solution add 90 mL of methanol and 70 mL of acetonitrile.

Flow rate: Adjust the flow rate so that the retention time of mosapride is about 9 minutes.

System suitability—

System performance: When the procedure is run with 50 μL of the standard solution under the

above operating conditions, the number of theoretical plates and the symmetry factor of the peak of mosapride are not less than 4000 and not more than 2.0, respectively.

System repeatability: When the test is repeated 6 times with 50 μL of the standard solution under the above operating conditions, the relative standard deviation of the peak area of mosapride is not more than 2.0%.

Dissolution Requirements

Labeled amount*	Specified minute	Dissolution rate
10 mg/g	45 minutes	Not less than 70%

*as Anhydrous Mosapride Citrate

Mosapride Citrate RS $C_{21}H_{25}ClFN_3O_3 \cdot C_6H_8O_7$: 614.02 (±)-4-amino-5-chloro-2-ethoxy-*N*-{[4-(4-fluorobenzyl)-2-morpholinyl]methyl}benzamide citrate. It meets the following requirements.

Purification method−To 10 g of mosapride citrate hydrate add 300 mL of ethanol (99.5), dissolve by warming, and filter while hot. Allow the filtrate to stand at room temperature, collect the crystals thus formed, and wash with a small amount of ethanol (99.5). Repeat the same procedure, and dry the crystals so obtained by using ethanol (99.5) 40 times its own mass under reduced pressure at room temperature.

Description−Mosapride Citrate RS occurs as white to yellowish white crystals or crystalline powder.

Identification−Determine the infrared absorption spectrum of Mosapride Citrate RS as directed in the potassium bromide disk method under Infrared Spectrophotometry <*2.25*>: it exhibits absorption at the wave numbers of about 3450 cm^{-1}, 3370 cm^{-1}, 1729 cm^{-1}, 1613 cm^{-1}, and 1229 cm^{-1}.

Related substances−Dissolve 0.10 g of Mosapride Citrate RS in 50 mL of methanol, and use this solution as the sample solution. Pipet 1 mL of this solution, and add methanol to make exactly 20 mL. Pipet 1 mL of this solution, add methanol to make exactly 20 mL, and use this solution as the standard solution. Perform the test with exactly 5 μL each of the sample solution and standard solution as directed under Liquid Chromatography <*2.01*> according to the following conditions. Determine each peak area of both solutions by the automatic integration method: the total area of the peaks other than mosapride obtained from the sample solution is not larger than the peak area of mosapride from the standard solution.

Operating conditions

Detector: An ultraviolet absorption photometer (wavelength: 274 nm).

Column: A stainless steel column 4.6 mm in inside diameter and 15 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (5 μm in particle diameter).

Column temperature: A constant temperature of about 40ºC.

Mobile phase: Dissolve 8.82 g of trisodium citrate dihydrate in 800 mL of water, adjust the pH to 3.3 with dilute hydrochloric acid, and add water to make 1000 mL. To 240 mL of this solution add 90 mL of methanol and 70 mL of acetonitrile.

Flow rate: Adjust the flow rate so that the retention time of mosapride is about 9 minutes.

Time span of measurement: About 3 times as long as the retention time of mosapride beginning after the solvent peak.

System suitability

Test for required detectability: Pipet 5 mL of the standard solution, and add methanol to make exactly 10 mL. Confirm that the peak area of mosapride obtained from 50 μL of this solution is equivalent to 30 to 70% of that from 50 μL of the standard solution.

System performance: To 5 mL of the sample solution add 5 mL of a solution of ethyl parahydroxybenzoate in methanol (1 in 1000), and then add methanol to make 25 mL. When the procedure is run with 5 μL of this solution under the above operating conditions, mosapride and ethyl parahydroxybenzoate are eluted in this order with the resolution between these peaks being not less than 1.5.

System repeatability: When the test is repeated 6 times with 5 μL of the standard solution under the above operating conditions, the relative standard deviation of the peak area of mosapride is not more than 2.0%.

Water <2.48>: not more than 1.0% (0.5 g, coulometric titration).

Content: not less than 99.0%. Assay−Weigh accurately 0.3 g of Mosapride Citrate RS, previously dried at 60ºC for 4 hours under reduced pressure using phosphorus (V) oxide as a desiccant, dissolve in 150 mL of acetic acid (100), and titrate <2.50> with 0.1 mol/L perchloric acid VS (potentiometric titration). Perform a blank determination in the same manner, and make any necessary correction.

Each mL of 0.1 mol/L perchloric acid VS
= 61.40 mg of $C_{21}H_{25}ClFN_3O_3 \cdot C_6H_8O_7$