Loperamide Hydrochloride Dry Syrup

Dissolution *<6.10>* Perform the test with an accurately weighed quantity of Loperamide Hydrochloride Dry Syrup, equivalent to about 1 mg of loperamide hydrochloride ($C_{29}H_{33}ClN_2O_2$.HCl) according to the labeled amount, at 50 revolutions per minute according to the Paddle method, using 900 mL of water as the dissolution medium. 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, pipet 5 mL of the subsequent filtrate, add exactly 2 mL of methanol, and use this solution as the sample solution. Separately, weigh accurately about 22 mg of Loperamide Hydrochloride RS, previously dried at 105ºC for 4 hours, and dissolve in methanol to make exactly 100. To exactly 5 mL of this solution add water to make exactly 100 mL. Further, to exactly 5 mL of this solution add water to make exactly 50 mL. Pipet 5 mL of this solution, add exactly 2 mL of methanol, and use this solution as the standard solution. Perform the test with exactly 100 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 loperamide in each solution.

The requirements are met if Loperamide Hydrochloride Dry Syrup conforms to the dissolution requirements.

Dissolution rate (%) with respect to the labeled amount of loperamide hydrochloride ($C_{29}H_{33}ClN_2O_2$.HCl)

$= M_S/M_T \times A_T/A_S \times 1/C \times 9/2$

M_S: Amount (mg) of Loperamide Hydrochloride RS

M_T: Amount (g) of sample

C: Labeled amount of loperamide hydrochloride ($C_{29}H_{33}ClN_2O_2$.HCl) in 1 g

Operating conditions —

Detector: An ultraviolet absorption photometer (wavelength: 214 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 3.0 g of triethylamine hydrochloride in 540 mL of water, and add 10 mL of diluted phosphoric acid (1 in 10) and 450 mL of acetonitrile.

Flow rate: Adjust the flow rate so that the retention time of loperamide is about 6 minutes.

System suitability —

System performance: When the procedure is run with 100 μL of the standard solution under the above operating conditions, the number of theoretical plates and the symmetry factor of the peak of loperamide are not less than 5000 and not more than 2.0, respectively.

System repeatability: When the test is repeated 6 times with 100 μL of the standard solution under the above operating conditions, the relative standard deviation of the peak area of loperamide is not more than 2.0%.

Dissolution Requirements

Labeled amount	Specified minute	Dissolution rate
0.5 mg/g	15 minutes	Not less than 75%

Triethylamine Hydrochloride $C_6H_{15}N.HCl$ A white crystalline powder.

Content: not less than 97.0%. Assay — Weigh accurately about 0.3 g of Triethylamine Hydrochloride, dissolve in 50 mL of water, add 1 mL each of a solution of dextrin (1 in 50) and a solution of acetic anhydride (1 in 5), and titrate *<2.50>* with 0.1 mol/L silver nitrate VS (indicator: fluorescein sodium TS). Perform a blank determination in the same manner, and make any necessary correction.

Each mL of 0.1 mol/L silver nitrate VS
= 13.77 mg of $C_6H_{15}N.HCl$

Containers and storage Light-resistant, and tight containers.

Dextrin Dextrin (JP).