Dilazep Hydrochloride Tablets

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Dilazep Hydrochloride Tablets contain not less than 95.0% and not more than 105.0% of the labeled amount of dilazep hydrochloride hydrate ($C_{31}H_{44}N_2O_{10}.2HCl.H_2O$: 695.63).

Method of preparation Prepare as directed under Tablets, with Dilazep Hydrochloride Hydrate.

Identification Perform the test with 10 μL each of the sample solution and standard solution obtained in the Assay as directed under Liquid Chromatography <2.01> according to the conditions described below: the retention times of the peaks of the principal peaks in the chromatograms obtained from the sample solution and the standard solution are the same, and both absorption spectra of these peaks exhibit similar intensities of absorption at the same wavelengths.

Operating conditions—

Column, column temperature, mobile phase, and flow rate: Proceed as directed in the operating conditions in the Assay.

Detector: A photodiode array detector (wavelength: 254 nm; spectrum range of measurement: 220 – 400 nm).

System suitability—

System performance: Proceed as directed in the system suitability in the Assay.

Uniformity of dosage units <6.02> Perform the test according to the following method: it meets the requirement of the Content uniformity test.

To 1 tablet of Dilazep Hydrochloride Tablets add 25 mL of the mobile phase, shake thoroughly to disintegrate, and add the mobile phase to make exactly V mL so that each mL contains about 1 mg of dilazep hydrochloride hydrate ($C_{31}H_{44}N_2O_{10}.2HCl.H_2O$). Centrifuge this solution, pipet 5 mL of the supernatant liquid, add exactly 5 mL of the internal standard solution, add the mobile phase to make 50 mL, and use this solution as the sample solution. Then, proceed as directed in the Assay.

Amount (mg) of dilazep hydrochloride hydrate ($C_{31}H_{44}N_2O_{10}.2HCl.H_2O$)

$= M_S \times Q_T / Q_S \times V / 50 \times 1.027$

M_S: Amount (mg) of dilazep hydrochloride hydrate for assay taken, calculated on the dried basis

Internal standard solution—A solution of ethyl parahydroxybenzoate in mobile phase (9 in 50,000).

Dissolution <6.10> When the test is performed at 100 revolutions per minute according to the Basket method, using 900 mL of 2nd fluid for dissolution test as the dissolution medium, the dissolution rates in 30 minutes of 50-mg tablet and in 45 minutes of 100-mg tablet are not less than 75%.

Start the test with 1 tablet of Dilazep Hydrochloride Tablets, 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 not less than 10 mL of the first filtrate, pipet V mL of the subsequent filtrate, add the dissolution medium to make exactly V' mL so that each mL contains about 11 μg of dilazep hydrochloride hydrate ($C_{31}H_{44}N_2O_{10}.2HCl.H_2O$), and use this solution as the sample solution. Separately, weigh accurately about 28 mg of dilazep hydrochloride hydrate for assay (separately determine the loss on drying <2.41> under the same conditions as Dilazep Hydrochloride Hydrate), dissolve in the dissolution medium to make exactly 100 mL. Pipet 4 mL of this solution, add the dissolution medium 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 standard solution at 265 nm as directed under Ultraviolet-visible Spectrophotometry <2.24>.

Dissolution rate (%) with respect to the labeled amount of dilazep hydrochloride hydrate ($C_{31}H_{44}N_2O_{10}.2HCl.H_2O$)

$= M_S \times A_T / A_S \times V' / V \times 1 / C \times 36 \times 1.027$

M_S: Amount (mg) of dilazep hydrochloride hydrate for assay taken, calculated on the dried basis

C: Labeled amount (mg) of dilazep hydrochloride hydrate ($C_{31}H_{44}N_2O_{10}.2HCl.H_2O$) in 1 tablet

Assay Weigh accurately the mass of not less than 20 tablets of Dilazep Hydrochloride Tablets, and powder. Weigh accurately a portion of the powder, equivalent to about 50 mg of dilazep hydrochloride hydrate ($C_{31}H_{44}N_2O_{10}.2HCl.H_2O$), add 25 mL of the mobile phase, shake thoroughly, and add the mobile phase to make exactly 50 mL. Centrifuge, pipet 5 mL of the supernatant liquid, add exactly 5 mL of the internal standard solution, add the mobile phase to make 50 mL, and use this solution as the sample solution. Separately, weigh accurately about 50 mg of dilazep hydrochloride hydrate for assay (separately determine the loss on drying <2.41> under the same conditions as Dilazep Hydrochloride Hydrate), and dissolve in the mobile phase to make exactly 50 mL. Pipet 5 mL of this solution, add exactly 5 mL of the internal standard solution, add the mobile phase to make 50 mL, and use this solution as the standard solution. Perform the test with 10 μL each of the sample solution and standard solution as directed under Liquid Chromatography <2.01> according to the conditions described below, and calculate the ratios, Q_T and Q_S, of the peak area of dilazep to that of the internal standard.

Amount (mg) of dilazep hydrochloride hydrate ($C_{31}H_{44}N_2O_{10}.2HCl.H_2O$)

$= M_S \times Q_T / Q_S \times 1.027$

M_S: Amount (mg) of dilazep hydrochloride hydrate for assay taken, calculated on the dried basis

Internal standard solution—A solution of ethyl parahydroxybenzoate in mobile phase (9 in 50,000).

Operating conditions—

Detector: An ultraviolet absorption photometer (wavelength: 254 nm).

Column: A stainless steel column 4.6 mm in inside diameter and 25 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (7 μm in particle diameter).

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

Mobile phase: A solution of sodium 1-heptanesulfonate in a mixture of water, acetonitrile and acetic acid (100) (60:40:1) (1.1 in 1000).

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

System suitability—

System performance: Dissolve 15 mg of 3,4,5-trimethoxybenzoic acid and 50 mg of dilazep hydrochloride hydrate for assay in 50 mL of mobile phase. To 5 mL of this solution, add 5 mL of the internal standard solution and 40 mL of the mobile phase. When the procedure is run with 10 μL of this solution under the above operating conditions, 3,4,5-trimethoxybenzoic acid, the internal standard, and dilazep are eluted in this order, and the resolutions between these peaks are not less than 4, respectively.

System repeatability: When the test is repeated 6 times with 10 μL of the standard solution under the above operating conditions, the relative standard deviation of the ratio of the peak area of dilazep to that of the internal standard is not more than 1.0%.

Containers and storage Containers—Tight containers.

Add the following to 9.41 Reagents, Test Solutions:

Dilazep hydrochloride hydrate for assay $C_{31}H_{44}N_2O_{10}.2HCl.H_2O$ [Same as the monograph Dilazep Hydrochloride Hydrate. It contains not less than 99.0% of dilazep hydrochloride ($C_{31}H_{44}N_2O_{10}.2HCl$), calculated on the dried basis.]

3,4,5-Trimethoxybenzoic Acid $C_{10}H_{12}O_5$ White crystalline powder. Sparingly soluble in acetonitrile, and practically insoluble in water. Melting point: 168 – 173°C.