Zopiclone Tablets

ゾピクロン錠

Zopiclone Tablets contain not less than 95.0% and not more than 105.0% of the labeled amount of zopiclone ($C_{17}H_{17}ClN_6O_3$: 388.81).

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

Identification To a quantity of powdered Zopiclone Tablets, equivalent to 30 mg of Zopiclone, add about 60 mL of 0.1 mol/L hydrochloric acid TS, shake thoroughly, add 0.1 mol/L hydrochloric acid TS to make 100 mL, and filter. To 2 mL of the filtrate add 0.1 mol/L hydrochloric acid TS to make 50 mL. Determine the absorption spectrum of this solution as directed under Ultraviolet-visible Spectrophotometry *<2.24>*: it exhibits maxima between 214 nm and 218 nm, and between 302 nm and 306 nm.

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 Zopiclone Tablets add the mobile phase, sonicate while occasional shaking, disintegrate, add the mobile phase to make exactly 50 mL, and filter through a membrane filter with a pore size not exceeding 0.45 μm. Discard the first 10 mL of the filtrate, pipet V mL of the subsequent filtrate, add exactly V'／10 mL of the internal standard solution, add the mobile phase to make V' mL so that each mL contains about 0.1 mg of zopiclone ($C_{17}H_{17}ClN_6O_3$), and use this solution as the sample solution. Then, proceed as directed in the Assay.

Amount (mg) of zopiclone ($C_{17}H_{17}ClN_6O_3$)
$= M_S \times Q_T / Q_S \times V' / V \times 1 / 10$

M_S: Amount (mg) of zopiclone for assay taken

Internal standard solution—A solution of salicylic acid in the mobile phase (1 in 800).

Dissolution *<6.10>* When the test is performed at 50 revolutions per minute according to the Paddle method, using 900 mL of 0.05 mol/L acetic acid-sodium acetate buffer solution (pH 4.0) as the dissolution medium, the dissolution rate in 30 minutes of Zopiclone Tablets is not less than 80%.

Start the test with 1 tablet of Zopiclone 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 the first 10 mL of the filtrate, pipet V mL of the subsequent filtrate, add the dissolution medium to make exactly V' mL so that each mL contains about 8.3 μg of zopiclone ($C_{17}H_{17}ClN_6O_3$), and use this solution as the sample solution. Separately, weigh accurately about 21 mg of zopiclone for assay, previously dried in vacuum at 100℃ for 24 hours, and 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 304 nm as directed under Ultraviolet-visible Spectrophotometry *<2.24>*.

Dissolution rate (%) with respect to the labeled amount of zopiclone ($C_{17}H_{17}ClN_6O_3$)
$= M_S \times A_T / A_S \times V' / V \times 1 / C \times 36$

M_S: Amount (mg) of zopiclone for assay taken
C: Labeled amount (mg) of zopiclone ($C_{17}H_{17}ClN_6O_3$) in 1 tablet

Assay To 20 tablets of Zopiclone Tablets add the mobile phase, sonicate while occasional shaking, disintegrate, add the mobile phase to make exactly 500 mL, and filter through a membrane filter with a pore size not exceeding 0.45 μm. Discard the first 10 mL of the filtrate, pipet V mL of the subsequent filtrate, add exactly V'／10 mL of the internal standard solution, add the mobile phase to make V' mL so that each mL contains about 0.1 mg of zopiclone ($C_{17}H_{17}ClN_6O_3$), and use this solution as the sample solution. Separately, weigh accurately about 50 mg of zopiclone for assay, previously dried in vacuum at 100℃ for 24 hours, and dissolve in the mobile phase to make exactly 20 mL. Pipet 4 mL of this solution, add exactly 10 mL of the internal standard solution, add the mobile phase to make 100 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 following conditions, and calculate the ratios, Q_T and Q_S, of the peak area of zopiclone to that of the internal standard.

Amount (mg) of zopiclone ($C_{17}H_{17}ClN_6O_3$) in 1 tablet of Zopiclone Tablet
$= M_S \times Q_T / Q_S \times V' / V \times 1 / 20$

M_S: Amount (mg) of zopiclone for assay taken

Internal standard solution—A solution of salicylic acid in the mobile phase (1 in 800).

Operating conditions—

Detector: An ultraviolet absorption photometer (wavelength: 304 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 30℃.

Mobile phase: To 378 mL of diluted acetic acid (100) (57 in 5000), add 222 mL of a solution of sodium acetate trihydrate (136 in 5000), and add 400 mL of acetonitrile.

Flow rate: Adjust so that the retention time of zopiclone is about 9.5 minutes.

System suitability —

System performance: When the procedure is run with 10 μL of the standard solution under the above operating conditions, the internal standard and zopiclone are eluted in this order with the resolution between these peaks being not less than 5.

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 zopiclone to that of the internal standard is not more than 1.0%.

Containers and storage Containers — Tight containers.

Storage — Light-resistant.

Add the following to 9.41 Reagents, Test Solutions:

Zopiclone for assay $C_{17}H_{17}ClN_6O_3$ [Same as the monograph Zopiclone. When dried, it contains not less than 99.5% of zopiclone ($C_{17}H_{17}ClN_6O_3$).]