Bicalutamide Tablets

ビカルタミド錠

Bicalutamide Tablets contain not less than 95.0% and not more than 105.0% of the labeled amount of bicalutamide ($C_{18}H_{14}F_4N_2O_4S$: 430.37).

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

Identification To a quantity of powdered Bicalutamide Tablets, equivalent to 5 mg of Bicalutamide, add 250 mL of methanol, shake thoroughly, and filter through a membrane filter with a pore size not exceeding 0.45 μm. To 10 mL of the filtrate add methanol to make 20 mL. Determine the absorption spectrum of the solution as directed under Ultraviolet-visible Spectrophotometry *<2.24>*: it exhibits a maximum between 269 nm and 273 nm.

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

To 1 tablet of Bicalutamide Tablets add 10 mL of water, shake thoroughly until the tablet is disintegrated. Then, add 80 mL of tetrahydrofuran, sonicate, add tetrahydrofuran to make exactly 100 mL, and filter through a membrane filter with a pore size 0.45 μm. Discard 1 mL of the first filtrate, pipet V mL of the subsequent filtrate, add a solution of sodium lauryl sulfate (3 in 200) to make exactly V' mL so that each mL contains about 8 μg of bicalutamide ($C_{18}H_{14}F_4N_2O_4S$), and use this solution as the sample solution. Separately, weigh accurately about 16 mg of Bicalutamide RS (separately determine the loss on drying *<2.41>* in the same conditions as Bicalutamide), dissolve in 2 mL of tetrahydrofuran, and add a solution of sodium lauryl sulfate (3 in 200) to make exactly 200 mL. Pipet 5 mL of this solution, add a solution of sodium lauryl sulfate (3 in 200) to make exactly 50 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 270 nm as directed under Ultraviolet-visible Spectrophotometry *<2.24>*.

Amount (mg) of bicalutamide ($C_{18}H_{14}F_4N_2O_4S$)
$= M_S \times A_T / A_S \times V'/V \times 1/20$

M_S: Amount (mg) of Bicalutamide RS taken, calculated on the dried basis

Dissolution *<6.10>* When the test is performed at 50 revolutions per minute according to the Paddle method, using 1000 mL of a solution of sodium lauryl sulfate (3 in 200) as the dissolution medium, the dissolution rate in 45 minutes of Bicalutamide Tablets is not less than 80%.

Start the test with 1 tablet of Bicalutamide Tablets, withdraw not less than 10 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 1 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 8 μg of bicalutamide ($C_{18}H_{14}F_4N_2O_4S$), and use this solution as the sample solution. Separately, weigh accurately about 8 mg of Bicalutamide RS (separately determine the loss on drying *<2.41>* in the same conditions as Bicalutamide), dissolve in 2 mL of tetrahydrofuran, and add the dissolution medium to make exactly 100 mL. Pipet 5 mL of this solution, add the dissolution medium to make exactly 50 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 270 nm as directed under Ultraviolet-visible Spectrophotometry *<2.24>*.

Dissolution rate (%) with respect to the labeled amount of bicalutamide ($C_{18}H_{14}F_4N_2O_4S$)
$= M_S \times A_T / A_S \times V'/V \times 1/C \times 100$

M_S: Amount (mg) of Bicalutamide RS taken, calculated on the dried basis

C: Labeled amount (mg) of bicalutamide ($C_{18}H_{14}F_4N_2O_4S$) in 1 tablet

Assay Weigh accurately the mass of not less than 20 tablets of Bicalutamide Tablets, and powder. Weigh accurately a portion of the powder, equivalent to about 50 mg of bicalutamide ($C_{18}H_{14}F_4N_2O_4S$), add 50 mL of tetrahydrofuran, sonicate, and add tetrahydrofuran to make exactly 100 mL. Filter this solution through a membrane filter with a pore size not exceeding 0.45 μm. Discard 1 mL of the first filtrate, pipet 4 mL of the subsequent filtrate, add exactly 5 mL of the internal standard solution, then add the mobile phase to make 50 mL, and use this solution as the sample solution. Separately, weigh accurately about 25 mg of Bicalutamide RS (separately determine the loss on drying *<2.41>* in the same conditions as Bicalutamide), dissolve in tetrahydrofuran to make exactly 50 mL. Pipet 4 mL of this solution, add exactly 5 mL of the internal standard solution, then 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 following conditions, and calculate the ratios, Q_T and Q_S, of the peak area of bicalutamide to that of the internal standard.

Amount (mg) of bicalutamide ($C_{18}H_{14}F_4N_2O_4S$)
$= M_S \times Q_T / Q_S \times 2$

M_S: Amount (mg) of Bicalutamide RS taken, calculated on the dried basis

Internal standard solution—A solution of propyl parahydroxybenzoate in a mixture of water, tetrahydrofuran and acetonitrile (13:4:3) (1 in 3500).

Operating conditions—

Detector: An ultraviolet absorption photometer (wavelength: 270 nm).

Column: A stainless steel column 4.6 mm in inside diameter and 12.5 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (3 μm in particle diameter).

Column temperature: A constant temperature of about 50°C.

Mobile phase: A mixture of water, tetrahydrofuran and acetonitrile (13:4:3).

Flow rate: Adjust so that the retention time of bicalutamide is about 7 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 bicalutamide are eluted in this order with the resolution between these peaks being not less than 7.

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

Containers and storage Containers—Tight containers.