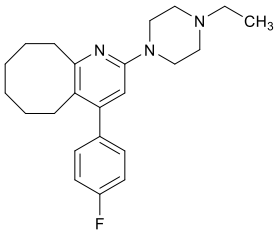
Blonanserin

ブロナンセリン



$C_{23}H_{30}FN_3$: 367.50

2-(4-Ethylpiperazin-1-yl)-4-(4-fluorophenyl)-5,6,7,8,9,10-hexahydrocycloocta[*b*]pyridine

[*132810-10-7*]

Blonanserin, when dried, contains not less than 98.5% and not more than 101.5% of blonanserin ($C_{23}H_{30}FN_3$).

Description Blonanserin occurs as white, crystals or crystalline powder.

It is sparingly soluble in methanol and in ethanol (99.5), and practically insoluble in water.

Identification **(1)** Determine the absorption spectrum of a solution of Blonanserin in methanol (1 in 80,000) as directed under Ultraviolet-visible Spectrophotometry <*2.24*>, and compare the spectrum with the Reference Spectrum or the spectrum of a solution of Blonanserin RS prepared in the same manner as the sample solution: both spectra exhibit similar intensities of absorption at the same wavelengths.

(2) Determine the infrared absorption spectrum of Blonanserin, as directed in the potassium bromide disk method under Infrared Spectrophotometry <*2.25*>, and compare the spectrum with the Reference Spectrum or the spectrum of Blonanserin RS: both spectra exhibit similar intensities of absorption at the same wave numbers.

Melting point <*2.60*> 123 – 126℃

Purity Related substances—Dissolve 50 mg of Blonanserin in 100 mL of methanol, and use this solution as the sample solution. Pipet 1 mL of the sample solution, add methanol to make exactly 200 mL, and use this solution as the standard solution. Perform the test with exactly 10 μL each of the sample solution and standard solution as directed under Liquid Chromatography <*2.01*> according to the following conditions, and determine each peak area by the automatic integration method: the area of the peak other than blonanserin obtained from the sample solution is not larger than 1/5 times the peak area of blonanserin from the standard solution, and the total area of the peaks other than blonanserin from the sample solution is not larger than 2/5 times the peak area of blonanserin from the standard solution. For the area of the peak having the relative retention time of about 0.62 to blonanserin, multiply the correction factor, 0.7.

Operating conditions—

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

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

System suitability—

Test for required detectability: Pipet 5 mL of the standard solution, add methanol to make exactly 50 mL. Confirm that the peak area of blonanserin obtained with 10 μL of this solution is equivalent to 7 to 13% of that with 10 μL of the standard solution.

System performance: To 3 mL of the sample solution add 10 mL of a solution of isoamyl benzoate in methanol (1 in 8000), then add methanol to make 20 mL. When the procedure is run with 10 μL of this solution under the above operating conditions, blonanserin and isoamyl benzoate 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 peak area of blonanserin is not more than 2.0%.

Loss on drying <*2.41*> Not more than 0.2% (1 g, 105℃, 2 hours).

Residue on ignition <*2.44*> Not more than 0.1% (1 g).

Assay Weigh accurately about 50 mg each of Blonanserin and Blonanserin RS, both previously dried, and dissolve each in methanol to make exactly 100 mL. Pipet 3 mL each of these solutions, add exactly 3 mL of internal standard solution, then add methanol to make 50 mL, and use these solutions as the sample solution and the standard solution, respectively. 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 blonanserin to that of the internal standard.

$$\text{Amount (mg) of blonanserin } (C_{23}H_{30}FN_3) = M_S \times Q_T / Q_S$$

M_S: Amount (mg) of blonanserin RS taken

Internal standard solution—A solution of isoamyl benzoate in methanol (1 in 2500).

Operating conditions—

Detector: An ultraviolet absorption photometer (wavelength: 230 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 40°C.

Mobile phase: Dissolve 1.66 g of potassium dihydrogen phosphate in 900 mL of water, adjust to pH 2.6 with diluted phosphoric acid (1 in 100), and then add water to make 1000 mL. To 7 volumes of this solution add 13 volumes of acetonitrile for liquid chromatography. Dissolve 1.16 g of sodium lauryl sulfate in 1000 mL of this solution.

Flow rate: Adjust so that the retention time of blonanserin is about 8 minutes.

System suitability—

System performance: When the procedure is run with 10 μL of the standard solution under the above operating conditions, blonanserin and the internal standard 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 blonanserin to that of the internal standard is not more than 1.0%.

Containers and storage Containers—Tight containers.

Add the following to 9.01 Reference Standards (1).

Blonanserin RS