Sarpogrelate Hydrochloride Fine Granules

Dissolution <*6.10*> Weigh accurately an amount of Sarpogrelate Hydrochloride Fine Granules, equivalent to about 50 mg of sarpogrelate hydrochloride ($C_{24}H_{31}NO_6$·HCl) according to the labeled amount, and perform the test at 50 revolutions per minute according to the Paddle method, using 900 mL of water as the dissolution medium. Start the test, 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, and use the subsequent filtrate as the sample solution. Separately, weigh accurately about 25 mg of Sarpogrelate Hydrochloride RS (separately, determine the water <*2.48*> with 0.1 g by coulometric titration), and dissolve in water to make exactly 50 mL. Pipet 5 mL of this solution, add water to make exactly 50 mL, and use this solution as the standard solution. Determine the absorbances, A_T and A_S, at 270 nm of the sample solution and standard solution as directed under Ultraviolet-visible Sectrophotometry <*2.24*>.

The requirements are met if Sarpogrelate Hydrochloride Fine Granules conform to the dissolution requirements.

Dissolution rate (%) with respect to the labeled amount of sarpogrelate hydrochloride ($C_{24}H_{31}NO_6$·HCl)

$= M_S/M_T \times A_T/A_S \times 1/C \times 180$

M_S: Amount (mg) of Sarpogrelate Hydrochloride RS, calculated on the anhydrous basis

M_T: Amount (g) of sample

C: Labeled amount (mg) of sarpogrelate hydrochloride ($C_{24}H_{31}NO_6$·HCl) in 1 g

Dissolution Requirements

Labeled amount	Specified minute	Dissolution rate
100 mg/g	15 minutes	Not less than 85%

Sarpogrelate Hydrochloride RS $C_{24}H_{31}NO_6$·HCl: 465.97 (1*RS*)-2-(dimethylamino)-1-{[2-(3-methoxyphenyl)phenoxy]methyl}ethyl hydrogen succinate hydrochloride. It meets the following requirement.

Description−Sarpogrelate Hydrochloride RS occurs as a white, crystalline powder.

Identification−Determine the infrared absorption spectrum of Sarpogrelate Hydrochloride RS as directed in the potassium chloride disk method under Infrared Spectrophotometry <*2.25*>: it exhibits absorption at the wave numbers of about 1741 cm^{-1}, 1603cm^{-1}, 1246 cm^{-1}, 1163 cm^{-1}, and 757 cm^{-1}.

Related substances−Dissolve 20 mg of Sarpogrelate Hydrochloride RS in 10 mL of the mobile phase, and use this solution as the sample solution. Pipet 2 mL of this solution, add the mobile phase to make exactly 200 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. Determine each peak area of both solutions by the automatic integration method: the area of the peak, having the relative retention time of about 0.85 with respect to sarpogrelate, obtained from the sample solution is not larger than 1/5 times the peak area of sarpogrelate from the standard solution, the area of the peak other than sarpogrelate and the above peaks from the sample solution is not larger than 1/10 times the peak area of sarpogrelate from the standard solution, and the total area of the peaks other than sarpogrelate from the sample solution is not larger than 1/5 times the peak area of sarpogrelate from the standard solution. For this calculation, use the area of the peak, having the relative retention time of about 0.85 with respect to sarpogrelate, after multiplying by their response factor, 0.78.

Operating conditions

Detector: An ultraviolet absorption photometer (wavelength: 272 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: A mixture of water, acetonitrile and trifluoroacetic acid (1300:700:1).

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

Time span of measurement: About 2.5 times as long as the retention time of sarpogrelate beginning after the solvent peak.

System suitability

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

System performance: When the procedure is run with 10 μL of the standard solution under the above operating conditions, the number of theoretical plates and the symmetry factor of the peak of sarpogrelate are not less than 3000 and not more than 2.0, 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 peak area of sarpogrelate is not more than 3.0%.

Water <*2.48*>: not more than 0.5% (0.1 g, coulometric titration).

Content: not less than 99.0%, calculated on the anhydrous basis. Assay−Weigh accurately about 0.4 g of Sarpogrelate Hydrochloride RS, dissolve in 30 mL of acetic acid (100), add 30 mL of acetic

anhydride, and titrate <2.50> with 0.1 mol/L perchloric acid VS (potentiometric titration). Perform a blank determination in the same manner, and make any necessary correction.

Each mL of 0.1 mol/L perchloric acid VS
= 46.60 mg of $C_{24}H_{31}NO_6 \cdot HCl$