

use these solutions as the standard solutions (1), (2) and (3). Perform the test with these solutions as directed under Thin-layer Chromatography <2.03>. Spot 4 μL each of the sample solution, standard solution (1), (2) and (3) on a plate of silica gel for thin-layer chromatography. Develop the plate with a mixture of ethyl acetate and acetic acid (100) (97:3) to a distance of about 17 cm, and air-dry the plate. Examine under ultraviolet light (main wavelength: 254 nm): the spots other than the principal spot obtained from the sample solution are not more intense than the spot from the standard solution (1), and the total intensity of spots other than the principal spot from the sample solution is not more than 1.0% calculated on the basis of intensities of the spots from the standard solution (1), (2) and (3).

Loss on drying <2.41> Not more than 0.5% (1 g, in vacuum not exceeding 0.7 kPa, 100°C, 2 hours).

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

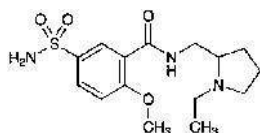
Assay Weigh accurately about 0.3 g of Sulindac, previously dried, dissolve in 50 mL of methanol and titrate <2.50> with 0.1 mol/L sodium hydroxide VS (potentiometric titration). Perform a blank determination in the same manner, and make any necessary correction.

Each mL of 0.1 mol/L sodium hydroxide VS
= 35.64 mg of $\text{C}_{20}\text{H}_{17}\text{FO}_3\text{S}$

Containers and storage Containers—Tight containers.

Sulpiride

スルピリド



$\text{C}_{15}\text{H}_{23}\text{N}_3\text{O}_4\text{S}$: 341.43
N-(1-Ethylpyrrolidin-2-ylmethyl)-2-methoxy-5-sulfamoylbenzamide
[15676-16-1]

Sulpiride, when dried, contains not less than 98.5% and not more than 101.0% of sulpiride ($\text{C}_{15}\text{H}_{23}\text{N}_3\text{O}_4\text{S}$).

Description Sulpiride is a white crystalline powder.

It is freely soluble in acetic acid (100) and in dilute acetic acid, sparingly soluble in methanol, slightly soluble in ethanol (99.5), and practically insoluble in water.

It is soluble in 0.05 mol/L sulfuric acid TS.

A solution of Sulpiride in methanol (1 in 100) shows no optical rotation.

Melting point: about 178°C (with decomposition).

Identification (1) Dissolve 0.1 g of Sulpiride in 0.05 mol/L sulfuric acid TS to make 100 mL. Dilute 5 mL of the solution with water to make 100 mL. Determine the absorption spectrum of the solution as directed under Ultraviolet-visible Spectrophotometry <2.24>, using water as the blank, and compare the spectrum with the Reference Spectrum: both spectra exhibit similar intensities of absorption at the same wavelengths.

(2) Determine the infrared absorption spectrum of Sulpiride as directed in the potassium bromide disk method under Infrared Spectrophotometry <2.25>, and compare the spec-

trum with the Reference Spectrum: both spectra exhibit similar intensities of absorption at the same wave numbers.

Purity (1) Clarity and color of solution—Dissolve 2.0 g of Sulpiride in 7 mL of dilute acetic acid, and add water to make 20 mL: the solution is clear. Perform the test with the solution as directed under Ultraviolet-visible Spectrophotometry <2.24>, using water as the blank: the absorbance at a wavelength of 450 nm does not exceed 0.020.

(2) Heavy metals <1.07>—Proceed with 2.0 g of Sulpiride as directed under Method 2, and perform the test. Prepare the control solution with 2.0 mL of Standard Lead Solution (not more than 10 ppm).

(3) Related substances—Dissolve 50 mg of Sulpiride in 10 mL of methanol, and use this solution as the sample solution. Dilute 1 mL of the sample solution, accurately measured, with methanol to make exactly 100 mL. Dilute 2 mL of this solution, accurately measured, with methanol to make exactly 10 mL, and use this solution as the standard solution. Perform the test with these solutions as directed under Thin-layer Chromatography <2.03>. Spot 20 μL each of the sample solution and standard solution on a plate of silica gel with fluorescent indicator for thin-layer chromatography. Develop the plate with a mixture of 1-butanol, water and acetic acid (100) (4:2:1) to a distance of about 10 cm, and air-dry the plate. Examine under ultraviolet light (main wavelength: 254 nm): the number of the spots other than the principal spot obtained from the sample solution is not more than 2, and they have no more intense than the spot from the standard solution. When the plate is exposed to iodine vapor for 30 minutes, the number of the spots other than the principal spot from the sample solution is not more than 2, and they have no more intense than the spot from the standard solution.

Loss on drying <2.41> Not more than 0.5% (1 g, 105°C, 3 hours).

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

Assay Dissolve about 0.4 g of Sulpiride, previously dried and accurately weighed, in 80 mL of acetic acid (100), and titrate <2.50> with 0.1 mol/L perchloric acid VS (indicator: 2 drops of crystal violet TS) until the color of the solution changes from violet through blue to bluish green. Perform a blank determination in the same manner, and make any necessary correction.

Each mL of 0.1 mol/L perchloric acid VS
= 34.14 mg of $\text{C}_{15}\text{H}_{23}\text{N}_3\text{O}_4\text{S}$

Containers and storage Containers—Well-closed containers.

Sulpiride Capsules

スルピリドカプセル

Sulpiride Capsules contain not less than 95.0% and not more than 105.0% of the labeled amount of sulpiride ($\text{C}_{15}\text{H}_{23}\text{N}_3\text{O}_4\text{S}$: 341.43).

Method of preparation Prepare as directed under Capsules, with Sulpiride.

Identification Determine the absorption spectrum of the sample solution obtained in the Assay as directed under Ultraviolet-visible Spectrophotometry <2.24>, using water as the blank: it exhibits a maximum between 289 nm and 293

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 capsule of Sulpiride Capsules add 30 mL of 0.05 mol/L sulfuric acid TS, shake for 30 minutes, add 0.05 mol/L sulfuric acid TS to make exactly V mL so that each mL contains about 1 mg of sulpiride ($C_{15}H_{23}N_3O_4S$), and filter the solution. Discard the first 20 mL of the filtrate, pipet 5 mL of the subsequent filtrate, add water to make exactly 100 mL, and use this solution as the sample solution. Proceed as directed in the Assay.

$$\begin{aligned} &\text{Amount (mg) of sulpiride } (C_{15}H_{23}N_3O_4S) \\ &= M_S \times A_T/A_S \times V/50 \end{aligned}$$

M_S : Amount (mg) of sulpiride for assay taken

Dissolution Being specified separately when the drug is granted approval based on the Law.

Assay Cut the capsule of not less than 20 Sulpiride Capsules, weigh accurately the mass of the contents, and powder. Weigh accurately a portion of the powder, equivalent to about 0.1 g of sulpiride ($C_{15}H_{23}N_3O_4S$), add 70 mL of 0.05 mol/L sulfuric acid TS, shake for 30 minutes, and add 0.05 mol/L sulfuric acid TS to make exactly 100 mL, and filter. Discard the first 20 mL of the filtrate, pipet 5 mL of the subsequent filtrate, add water to make exactly 100 mL, and use this solution as the sample solution. Separately, weigh accurately about 50 mg of sulpiride for assay, previously dried at 105°C for 3 hours, and dissolve in 0.05 mol/L sulfuric acid TS to make exactly 50 mL. Pipet 5 mL of this solution, add water 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 291 nm as directed under Ultraviolet-visible Spectrophotometry <2.24>, using water as the blank.

$$\begin{aligned} &\text{Amount (mg) of sulpiride } (C_{15}H_{23}N_3O_4S) \\ &= M_S \times A_T/A_S \times 2 \end{aligned}$$

M_S : Amount (mg) of sulpiride for assay taken

Containers and storage Containers—Tight containers.

Sulpiride Tablets

スルピリド錠

Sulpiride Tablets contain not less than 95.0% and not more than 105.0% of the labeled amount of sulpiride ($C_{15}H_{23}N_3O_4S$; 341.43).

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

Identification Determine the absorption spectrum of the sample solution obtained in the Assay as directed under Ultraviolet-visible Spectrophotometry <2.24>, using water as the blank: it exhibits a maximum between 289 nm and 293 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 Sulpiride Tablets add 30 mL of 0.05 mol/L sulfuric acid TS, shake for 30 minutes, add 0.05 mol/L sulfuric acid TS to make exactly V mL so that each mL contains about 1 mg of sulpiride ($C_{15}H_{23}N_3O_4S$), and filter the solu-

tion. Discard the first 20 mL of the filtrate, pipet 5 mL of the subsequent filtrate, add water to make exactly 100 mL, and use this solution as the sample solution. Proceed as directed in the Assay.

$$\begin{aligned} &\text{Amount (mg) of sulpiride } (C_{15}H_{23}N_3O_4S) \\ &= M_S \times A_T/A_S \times V/50 \end{aligned}$$

M_S : Amount (mg) of sulpiride for assay taken

Dissolution <6.10> When the test is performed at 50 revolutions per minute according to the Paddle method, using 900 mL of 2nd fluid for dissolution test as the dissolution medium, the dissolution rate of a 50-mg tablet in 30 minutes is not less than 80%, that of a 100-mg tablet in 45 minutes is not less than 75%, and that of a 200-mg tablet in 45 minutes is not less than 70%.

Start the test with 1 tablet of Sulpiride 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 0.5 μ m. 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 56 μ g of sulpiride ($C_{15}H_{23}N_3O_4S$), and use this solution as the sample solution. Separately, weigh accurately about 28 mg of sulpiride for assay, previously dried at 105°C for 3 hours, and dissolve in the dissolution medium to make exactly 100 mL. Pipet 5 mL of this solution, add the dissolution medium to make exactly 25 mL, and use this solution as the standard solution. Determine the absorbances, A_T and A_S , at 291 nm of the sample solution and standard solution as directed under Ultraviolet-visible Spectrophotometry <2.24>.

$$\begin{aligned} &\text{Dissolution rate (\%)} \text{ with respect to the labeled amount} \\ &\text{of sulpiride } (C_{15}H_{23}N_3O_4S) \\ &= M_S \times A_T/A_S \times V'/V \times 1/C \times 180 \end{aligned}$$

M_S : Amount (mg) of sulpiride for assay taken

C : Labeled amount (mg) of sulpiride ($C_{15}H_{23}N_3O_4S$) in 1 tablet

Assay Weigh accurately, and powder not less than 20 Sulpiride Tablets. Weigh accurately a portion of the powder, equivalent to about 0.1 g of sulpiride ($C_{15}H_{23}N_3O_4S$), add 70 mL of 0.05 mol/L sulfuric acid TS, shake for 30 minutes, and add 0.05 mol/L sulfuric acid TS to make exactly 100 mL, and filter. Discard the first 20 mL of the filtrate, pipet 5 mL of the subsequent filtrate, add water to make exactly 100 mL, and use this solution as the sample solution. Separately, weigh accurately about 50 mg of sulpiride for assay, previously dried at 105°C for 3 hours, and dissolve in 0.05 mol/L sulfuric acid TS to make exactly 50 mL. Pipet 5 mL of this solution, add water 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 291 nm as directed under Ultraviolet-visible Spectrophotometry <2.24>, using water as the blank.

$$\begin{aligned} &\text{Amount (mg) of sulpiride } (C_{15}H_{23}N_3O_4S) \\ &= M_S \times A_T/A_S \times 2 \end{aligned}$$

M_S : Amount (mg) of sulpiride for assay taken

Containers and storage Containers—Tight containers.