# Mesalazine Extended-release Tablets

メサラジン徐放錠

Mesalazine Extended-release Tablets contain not less than 95.0% and not more than 105.0% of the labeled amount of mesalazine ($C_7H_7NO_3$: 153.14).

**Method of preparation** Prepare as directed under Tablets, with Mesalazine.

**Identification** Powder an amount of Mesalazine Extended-release Tablets. Shake vigorously a portion of the powder, equivalent to 20 mg of mesalazine, with 100 mL of diluted phosphoric acid (1 in 1000). To 5 mL of this solution add diluted phosphoric acid (1 in 1000) to make exactly 50 mL, filter, and determine the absorbance spectrum of the filtrate as directed under Ultraviolet-visible Spectrophotometry *<2.24>*: it exhibits maxima between 227 nm and 231 nm, and between 298 nm and 302 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 Mesalazine Extended-release Tablets add 6*V*/25 mL of diluted phosphoric acid (1 in 1000), shake until the tablet is disintegrated, then add 3*V*/5 mL of methanol, and agitate with the aid of ultrasonic waves for 30 minutes. Add diluted phosphoric acid (1 in 1000) to make exactly *V* mL so that each mL contains about 1 mg of mesalazine ($C_7H_7NO_3$), and centrifuge. Pipet 8 mL of the supernatant liquid, add exactly 2 mL of the internal standard solution and 13 mL of methanol, then add diluted phosphoric acid (1 in 1000) to make 50 mL, and use this solution as the sample solution. Then, proceed as directed in the Assay.

Amount (mg) of mesalazine ($C_7H_7NO_3$)
$= M_S \times Q_T / Q_S \times V / 40$

$M_S$: Amount (mg) of mesalazine for assay taken

*Internal standard solution*－A solution of ethyl aminobenzoate in methanol (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 2nd fluid for dissolution test as the dissolution medium, the dissolution rates in 3 hours, in 6 hours and in 24 hours of Mesalazine Extended-release Tablets are 10 to 40%, 30 to 60%, and not less than 80%, respectively

Start the test with 1 tablet of Mesalazine Extended-release Tablets, withdraw exactly 20 mL of the medium at each specified minute after starting the test and supply exactly 20 mL of warmed dissolution medium to 37±0.5℃ immediately after withdrawing of the medium. Filter the withdrawn media through a membrane filter with a pore size not exceeding 0.45 μm.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 56 μg of mesalazine ($C_7H_7NO_3$), and use these solutions as the sample solutions. Separately, weigh accurately about 28 mg of mesalazine for assay, previously dried at 105℃ for 2 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, $A_{T(n)}$ and $A_S$, at 330 nm of the sample solutions and standard solution as directed under Ultraviolet-visible Spectrophotometry *<2.24>*.

Dissolution rate (%) in each case of *n* with respect to the labeled amount of mesalazine ($C_7H_7NO_3$) (*n* = 1, 2, 3)

$$= M_S \times \left\{ \frac{A_{T(n)}}{A_S} + \sum_{i=1}^{n-1} \left( \frac{A_{T(i)}}{A_S} \times \frac{1}{45} \right) \right\} \times \frac{V'}{V} \times \frac{1}{C} \times 180$$

$M_S$: Amount (mg) of mesalazine for assay taken

*C*: Labeled amount (mg) of mesalazine ($C_7H_7NO_3$) in 1 tablet

**Assay** Weigh accurately the mass of not less than 20 Mesalazine Extended-release Tablets, and powder. Weigh accurately a portion of the powder, equivalent to about 40 mg of mesalazine ($C_7H_7NO_3$), add 100 mL of diluted phosphoric acid (1 in 1000), shake vigorously, and agitate to dissolve with the aid of ultrasonic waves for 5 minutes. Add exactly 10 mL of the internal standard solution, then add 90 mL of methanol and diluted phosphoric acid (1 in 1000) to make 250 mL, and use this solution as the sample solution. Separately, weigh accurately about 40 mg of mesalazine for assay, previously dried at 105℃ for 2 hours, add 100 mL of diluted phosphoric acid (1 in 1000), shake vigorously, and agitate with the aid of ultrasonic waves for 5 minutes. Add exactly 10 mL of the internal standard solution, then add 90 mL of methanol and diluted phosphoric acid (1 in 1000) to make 250 mL, and use this solution as the standard solution. Filter 5 mL each of the sample solution and the standard solution separately through membrane filter with 0.45 μm in pore size. Perform the test with 10 μL each of these filtrates 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 mesalazine to that of the internal standard.

Amount (mg) of mesalazine ($C_7H_7NO_3$) = $M_S \times Q_T / Q_S$

$M_S$: Amount (mg) of mesalazine for assay taken

*Internal standard solution*－A solution of ethyl aminobenzoate in methanol (1 in 800).

*Operating conditions*－

Detector: An ultraviolet absorption photometer (wavelength: 300 nm).

Column: A stainless steel column 4.0 mm in inside diameter and 10 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (5 μm in particle diameter).

Column temperature: A constant temperature of about 40℃.

Mobile phase: Dissolve 400 mL of methanol, 1 mL of phosphoric acid, 0.865 g of sodium lauryl sulfate and 0.679 g of ammonium tetrabutyl hydrogen sulfate in water to make 1000 mL.

Flow rate: Adjust so that the retention time of mesalazine is about 10 minutes..

*System suitability*－

System performance: When the procedure is run with 10 μL of the standard solution under the above operating conditions, mesalazine and the internal standard are eluted in this order with the resolution between these peaks being not less than 3.

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

**Containers and storage** Containers－Well-closed containers.

Storage－Light-resistant.

***Add the following to 9.41 Reagents, Test Solutions:***

**Mesalazine for assay** $C_7H_7NO_3$ [Same as the monograph Mesalazine. When dried, it contains not less than 99.0% of mesalazine ($C_7H_7NO_3$)]