**Rifaximin Tablets**

Details for the public consultation of this monograph are as follows:

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<th>EAG ABS</th>
<th>Antibiotics</th>
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**Notes:**  
New Monograph for the BP 2022.  
Note: Identification procedure subject to change. BP are happy to take recommendations based on validated methodology.  
Note: Dissolution EPCRS likely to be replaced using the specific absorbance value of Rifaximin, determined through laboratory study.

**Action and use**

Rifaximin-type antibacterial.

**DEFINITION**

Rifaximin Tablets contain Rifaximin.

The Tablets comply with the requirements stated under Tablets and with the following requirements.

Content of rifaximin, C₄₃H₅₁N₃O₁₁

95.0 to 105.0% of the stated amount.

**IDENTIFICATION**

**SUITABLE EXTRACTION PROCEDURE.** The infrared absorption spectrum of the residue, Appendix II A, is concordant with the reference spectrum of Rifaximin (RS XXX).

**ALTERNATIVELY:**

A. In the Assay, the retention time of the principal peak in the chromatogram obtained with solution (1) is similar to that of the peak in the chromatogram obtained with solution (2).

B. In the Assay, the UV spectrum of the principal peak, recorded between 190 nm and 400 nm, in the chromatogram obtained with solution (1) is similar that of the peak in the chromatogram obtained with solution (2).

**TESTS**
Dissolution

Comply with the dissolution test for tablets and capsules, Appendix XII B1.

Solution A  Dissolve 13.6 g of sodium acetate in 800 mL water, add 6 mL of glacial acetic acid and dilute to 1000 mL using water. Add 2 g of sodium lauryl sulfate and mix.

TEST CONDITIONS

(a) Use Apparatus 2, rotating the paddle at 50 revolutions per minute.
(b) Use 900 mL of solution A at a temperature of 37°, as the medium.

PROCEDURE

(1) After 60 minutes withdraw a sample of the medium and measure the absorbance of the filtered sample, suitably diluted with the dissolution medium if necessary, to produce a solution expected to contain 0.02% w/v rifaximin, at the maximum at 290 nm, Appendix II B, using dissolution medium in the reference cell.
(2) Measure the absorbance of a 0.02% w/v solution of rifaximin EPCRS in the dissolution medium using dissolution medium in the reference cell.

DETERMINATION OF CONTENT

Calculate the total content of rifaximin, C43H51N3O11, in the medium from the absorbances obtained and using the declared content of C43H51N3O11, in rifaximin EPCRS.

LIMITS

The amount of rifaximin released is not less than 70% (Q) of the stated amount.

Related substances

Carry out the method for liquid chromatography, Appendix III D, using the following solutions in the mobile phase.

(1) Disperse a quantity of the powdered tablets containing 0.25 g of Rifaximin with the mobile phase. Dilute to 50 mL and filter through a 0.45-µm filter (Whatman GF-C filter is suitable).
(2) Dilute 1 volume of solution (1) to 200 volumes.
(3) 0.125% w/v of rifaximin for system suitability EPCRS.
(4) Dilute 1 volume of solution (2) to 5 volumes.

CHROMATOGRAPHIC CONDITIONS

(a) Use a stainless steel column (25 cm x 4.6 mm) packed with end-capped octadecylsilyl silica gel for chromatography (5 µm) (Alltima C18 is suitable).
(b) Use isocratic elution and the mobile phase described below.
(c) Use a flow rate of 1.4 mL per minute.
(d) Use a column temperature of 40°.
(e) Use a detection wavelength of 276 nm.
(f) Inject 20 µL of each solution.
(g) Allow the chromatography to proceed for 3 times the retention time of rifaximin.

MOBILE PHASE

37 volumes of a solution of 0.316% w/v ammonium formate, adjusted to pH 7.2 using dilute ammonia R1 and 63 volumes of a mixture of equal volumes of acetonitrile and methanol.
When the chromatograms are recorded under the prescribed conditions, the relative retentions with reference to rifaximin (retention time about 12 minutes) are: impurities D and H (co-elute), about 0.7.

**SYSTEM SUITABILITY**

The test is not valid unless, in the chromatogram obtained with solution (3), the resolution between the peak due to impurities D and H and the peak due to rifaximin is at least 3.0.

**LIMITS**

In the chromatogram obtained with solution (1):

- the area of any peak corresponding to impurities D and H is not greater than the area of the principal peak in the chromatogram obtained with solution (2) (0.5%);

- the area of any other secondary peak is not greater than twice the area of the principal peak in the chromatogram obtained with solution (4) (0.2%);

- the sum of the areas of any secondary peaks is not greater than 3 times the area of the principal peak in the chromatogram obtained with solution (2) (1.5%).

Disregard any peak with an area less than the area of the principal peak in the chromatogram obtained with solution (4) (0.1%).

**Water**

The tablets contain not more than 8.0% w/w of water, Appendix IX C, Method I. Use 0.1 g.

**ASSAY**

Weigh and powder 20 tablets. Carry out the method for liquid chromatography, Appendix III D, using the following solutions in the mobile phase.

(1) Shake a portion of the powdered tablets containing 0.5 g of Rifaximin with mobile phase and dilute to 100 mL. Filter, and dilute the filtrate to produce a solution containing 0.004% w/v of Rifaximin.

(2) 0.004% w/v of rifaximin EPCRS.

**CHROMATOGRAPHIC CONDITIONS**

The chromatographic conditions under Related substances may be used.

**DETERMINATION OF CONTENT**

Calculate the content of $C_{43}H_{51}N_{3}O_{11}$, in the tablets from the chromatograms obtained and using the declared content of $C_{43}H_{51}N_{3}O_{11}$, in rifaximin EPCRS.

**IMPURITIES**

The impurities limited by the requirements of this monograph include those listed under Rifaximin.