

Status: Effectivity information can only be shown for content published to the website.

Update information can only be shown for content published to the website.

Metronidazole Gel

General Notices

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

EAG AIM	Anti-infective Medicines
Contact Details	Sarah.Bowles@mhra.gov.uk Kajetan.Rakowski2@mhra.gov.uk Oliver.Waddington@mhra.gov.uk
Deadline for Comment	31 st December 2026
Target Publication (subject to change)	BP 2028
Notes:	REVISED Content, Identification, Acidity, and Related Substances updated. If limits are too restrictive, please provide batch/stability data to demonstrate that an increase is required.

Action and use

Imidazole antibacterial.

DEFINITION

Metronidazole Gel contains [Metronidazole](#) in a suitable water-soluble basis.

The gel complies with the requirements stated under [Topical Semi-solid Preparations](#) and with the following requirements.

Content of metronidazole, C₆H₉N₃O₃

95.0 to 105.0% of the stated amount.

IDENTIFICATION

In the Assay, record the UV spectrum of the principal peak in the chromatograms obtained with solutions (1) and (2) with a diode array detector in the range of 210 to 400 nm.

The UV spectrum of the principal peak in the chromatogram obtained with solution (1) is concordant with that of the peak in the chromatogram obtained with solution (2);

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).

TESTS

Acidity

pH, 4.5 to 7.0, [Appendix V L](#).

Related substances

Carry out the method for [liquid chromatography](#), [Appendix III D](#), using the following solutions.

- (1) Transfer a quantity of gel containing 25 mg of metronidazole to a 10-mL volumetric flask. Disperse in [tetrahydrofuran](#) and make up to volume with [tetrahydrofuran](#). Dilute 1 mL of the solution to 5 mL with the mobile phase and centrifuge.
- (2) Dilute 1 volume of solution (1) to 200 volumes in the mobile phase.
- (3) 0.00005% w/v each of [2-methyl-5-nitroimidazole BPCRS](#) (impurity A) and [metronidazole BPCRS](#) in mobile phase.
- (4) Dilute 1 volume of solution (2) to 10 volumes in the mobile phase.

CHROMATOGRAPHIC CONDITIONS

- (a) Use a stainless steel column (25 cm × 4.6 mm) packed with [octadecylsilyl silica gel for chromatography](#) (5 µm) (Spherisorb ODS 1 is suitable).
- (b) Use isocratic elution and the mobile phase described below.
- (c) Use a flow rate of 1.0 mL per minute.
- (d) Use an ambient column temperature.
- (e) Use a detection wavelength of 315 nm.
- (f) Inject 10 µL of each solution.
- (g) Allow the chromatography to proceed for three times the retention of metronidazole.

MOBILE PHASE

30 volumes of [methanol](#) and 70 volumes of 0.01M [potassium dihydrogen orthophosphate](#).

When the chromatograms are recorded under the prescribed conditions, the relative retention with reference to Metronidazole (retention time about 7 minutes) is: impurity A, about 0.7.

SYSTEM SUITABILITY

The test is not valid unless, in the chromatogram obtained with solution (3), the [resolution](#) between the peaks due to metronidazole and impurity A is at least 2.0.

LIMITS

In the chromatogram obtained with solution (1):

the area of any peak corresponding to impurity A is not greater than the area of the principal peak in the chromatogram obtained with solution (2) (0.5%);

the area of any secondary peak is not greater than 0.2 times the area of the principal peak in the chromatogram obtained with solution (2) (0.1%);

the sum of the areas of any secondary peaks is not greater than twice the area of the principal peak in the chromatogram obtained with solution (2) (1.0%).

Disregard any peak with an area less than the area of the principal peak in the chromatogram obtained with solution (4) (0.05%).

Nitrite

Disperse 1.0 g of the gel in sufficient water to produce 100 mL. To 40 mL of the solution add 2 mL of sulfanilic acid solution, 2 mL of aminonaphthalenesulfonic acid solution and sufficient water to produce 50 mL. Allow to stand at room temperature for 1 hour. Measure the absorbance of the resulting solution at the maximum at 524 nm, Appendix II B, using in the reference cell a solution prepared by treating 40 mL of water in the same manner, beginning at the words 'add 2 mL of sulfanilic acid solution...'.

The absorbance is not greater than that obtained by repeating the procedure using 1 mL of nitrite standard solution (20 ppm) diluted to 40 mL with water and treated at the same time and in the same manner, beginning at the words 'add 2 mL of sulfanilic acid solution...' (50 ppm, calculated with reference to the gel).

ASSAY

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

- (1) Dissolve a quantity of the gel containing 50 mg of metronidazole in methanol (8%) to produce 200 mL.
- (2) 0.25% w/v of metronidazole BPCRS in methanol (8%). Dilute 1 volume of this solution to 10 volumes with water.

CHROMATOGRAPHIC CONDITIONS

- (a) Use a stainless steel column (5 cm × 4.6 mm) packed with end-capped octadecylsilyl silica gel for chromatography (3 μm) (Spherisorb ODS 2) is suitable
- (b) Use isocratic elution and the mobile phase described below.
- (c) Use a flow rate of 1.5 ml per minute.
- (d) Use an ambient column temperature.
- (e) Use a detection wavelength of 240 nm.
- (f) Inject 20 μL of each solution.

MOBILE PHASE

3 volumes of [methanol](#) and 97 volumes of 0.005M [potassium dihydrogen orthophosphate](#), the pH of the mixture being adjusted to 4.0 with [orthophosphoric acid](#)

DETERMINATION OF CONTENT

Calculate the content of $C_6H_9N_3O_3$ in the gel using the declared content of $C_6H_9N_3O_3$ in [metronidazole BPCRS](#).

IMPURITIES

The impurities limited by the requirements of this monograph include those listed under [Metronidazole](#).

DRAFT MONOGRAPH
SUBJECT TO CHANGE