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Fenofibrate Capsules

General Notices

Action and use

Fibrate; lipid-regulating drug.

DEFINITION

Fenofibrate Capsules contain Fenofibrate.

The capsules comply with the requirements stated under Capsules and with the following requirements.

PRODUCTION

A suitable dissolution test is carried out to demonstrate the appropriate release of Fenofibrate. The dissolution profile reflects the *in vivo* performance which in turn is compatible with the dosage schedule recommended by the manufacturer.

Content of fenofibrate, $C_{20}H_{21}ClO_4$

95.0 to 105.0% of the stated amount.

IDENTIFICATION

Disperse a quantity of the capsule contents containing 0.2 g of Fenofibrate in 20 mL of *acetone*, filter through a 0.45-µm nylon syringe filter and evaporate to dryness under a stream of nitrogen. Add 5 mL of *water* to the residue and mix with the aid of ultrasound. Filter the suspension and dry the resulting powder at 60° at a pressure of 1 kPa for 30 minutes. The *infrared absorption spectrum* of the residue, Appendix II A, is concordant with the reference spectrum of fenofibrate *(RS 511)*.

TESTS

Related substances

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

(1) To a quantity of the powdered capsule contents containing 0.1 g of Fenofibrate, add 80 mL of the mobile phase, mix with the aid of ultrasound and intermittent shaking. Dilute to 100 mL with the mobile phase and filter (a 0.45-µm nylon syringe filter is suitable).
(2) Dilute 1 volume of solution (1) to 100 volumes. Further dilute 1 volume to 5 volumes.
(3) 0.0001% w/v each of *fenofibrate impurity A EPCRS* and *fenofibrate impurity B EPCRS*.

CHROMATOGRAPHIC CONDITIONS

(a) Use a stainless steel column (25 cm × 4.0 mm) packed with *end-capped octadecylsilyl silica gel* (5 µm) (Hypersil C18 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 286 nm.
(f) Inject 20 µL of each solution.
(g) Allow the chromatography to proceed for twice the retention time of fenofibrate.

MOBILE PHASE

30 volumes of *water* previously adjusted to pH 2.5 with *orthophosphoric acid* and 70 volumes of *acetonitrile*.

When the chromatograms are recorded under the prescribed conditions, the relative retentions with reference to fenofibrate (retention time about 10 minutes) are: impurity A, about 0.34 and impurity B, about 0.36.

SYSTEM SUITABILITY

The test is not valid unless, in the chromatogram obtained with solution (3), the *resolution* between the peaks due to impurity A and impurity B is at least 1.5.

LIMITS

In the chromatogram obtained with solution (1):

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

the sum of the areas of any *secondary peaks* is not greater than 5 times the area of the principal peak in the chromatogram obtained with solution (2) (1%).

Disregard any peak with an area less than half the area of the principal peak in the chromatogram obtained with solution (2) (0.1%).

ASSAY

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

(1) Disperse 10 whole capsules with 360 mL of the mobile phase with shaking and then mix with the aid of ultrasound. Dilute to 500 mL and filter (a 0.45-µm nylon syringe filter is suitable). Further dilute to produce a solution containing 0.1% w/v of Fenofibrate.
(2) 0.1% w/v of *fenofibrate BPCRS*.
(3) 0.0001% w/v each of *fenofibrate impurity A EPCRS* and *fenofibrate impurity B EPCRS*.

CHROMATOGRAPHIC CONDITIONS

The chromatographic conditions described under Related substances may be used with an injection volume of 10 µL.

SYSTEM SUITABILITY

The Assay is not valid unless, in the chromatogram obtained with solution (3), the *resolution* between the peaks due to impurity A and impurity B is at least 1.5.

DETERMINATION OF CONTENT

Calculate the content of $C_{20}H_{21}ClO_4$ in the capsules from the chromatograms obtained and using the declared content of $C_{20}H_{21}ClO_4$ in *fenofibrate BPCRS*.

IMPURITIES

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