FLUCLOXACILLIN SODIUM
Flucloxacillinum natricum

C<sub>21</sub>H<sub>21</sub>CIF2N4NaO<sub>6</sub>S·H<sub>2</sub>O

**DEFINITION**

Sodium (2S,5R,6R)-6-[(3-[2-chloro-6-fluorophenyl]-5-methylisoxazol-4-yl)carbonyl]amino]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate monohydrate.

Semi-synthetic product derived from a fermentation product.

**CHARACTERS**

*Appearance*: white or almost white, hygroscopic, crystalline powder.

*Solubility*: freely soluble in water and in methanol, soluble in ethanol (96 per cent).

**IDENTIFICATION**

First identification: A, D.

Second identification: B, C, D.

A. Infrared absorption spectrophotometry (2.2.24).

Comparison: flucloxacillin sodium CRS.

B. Thin-layer chromatography (2.2.27).

**Test solution**. Dissolve 25 mg of the substance to be examined in 5 ml of water R.

**Reference solution (a)**. Dissolve 25 mg of flucloxacillin sodium CRS in 5 ml of water R.

**Reference solution (b)**. Dissolve 25 mg of cloxacillin sodium CRS, 25 mg of dicloxacillin sodium CRS and 25 mg of flucloxacillin sodium CRS in 5 ml of water R.

**Plate**: TLC silanised silica gel plate R.

**Mobile phase**: mix 30 volumes of acetone R and 70 volumes of a 154 g/l solution of ammonium acetate R adjusted to pH 5.0 with glacial acetic acid R.

**Application**: 1 µl.

**Development**: over a path of 15 cm.

**Drying**: in air.

**Detection**: expose to iodine vapour until the spots appear and examine in daylight.

**System suitability**: reference solution (b):

- the chromatogram shows 3 clearly separated spots.

**Results**: the principal spot in the chromatogram obtained with the test solution is similar in position, colour and size to the principal spot in the chromatogram obtained with reference solution (a).

C. Place about 2 mg in a test-tube about 150 mm long and 15 mm in diameter. Moisten with 0.05 ml of water R and add 2 ml of sulphuric acid-formaldehyde reagent R. Mix the contents of the tube by swirling; the colour of the solution is slightly greenish-yellow. Place the test-tube in a water-bath for 1 min; the solution becomes yellow.

D. It gives reaction (a) of sodium (2.3.1).

**TESTS**

**Solution S**. Dissolve 2.50 g in carbon dioxide-free water R and dilute to 25.0 ml with the same solvent.

**Appearance of solution**. Solution S is clear (2.2.1) and its absorbance (2.2.25) at 430 nm is not greater than 0.04.

**pH** (2.2.3): 5.0 to 7.0 for solution S.

**Specific optical rotation** (2.2.7): +158 to +168 (anhydrous substance).

Dissolve 0.250 g in water R and dilute to 25.0 ml with the same solvent.

**Related substances**. Liquid chromatography (2.2.29).

**Test solution (a)**. Dissolve 50.0 mg of the substance to be examined in the mobile phase and dilute to 50.0 ml with the mobile phase.

**Test solution (b)**. Dilute 5.0 ml of test solution (a) to 50.0 ml with the mobile phase.

**Reference solution (a)**. Dissolve 50.0 mg of flucloxacillin sodium CRS in the mobile phase and dilute to 50.0 ml with the mobile phase. Dilute 5.0 ml of this solution to 50.0 ml with the mobile phase.

**Reference solution (b)**. Dilute 5.0 ml of reference solution (a) to 50.0 ml with the mobile phase.

**Reference solution (c)**. Dissolve 5 mg of flucloxacillin sodium CRS and 5 mg of cloxacillin sodium CRS in the mobile phase, then dilute to 50.0 ml with the mobile phase.

**Column**:—

- **size**: 1 = 0.25 m, Ø = 4 mm;
- **stationary phase**: octadecysilyl silica gel for chromatography (5 µm).

**Mobile phase**: mix 25 volumes of acetoniitrite R1 and 75 volumes of a 2.7 g/l solution of potassium dihydrogen phosphate R adjusted to pH 5.0 with dilute sodium hydroxide solution R.

**Flow rate**: 1 ml/min.

**Injection**: spectrophotometer at 225 nm.

**Run time**: 6 times the retention time of flucloxacillin.

**System suitability**: reference solution (c):

- **resolution**: minimum 2.5 between the peaks due to cloxacillin (1<sup>st</sup> peak) and flucloxacillin (2<sup>nd</sup> peak).

**Limits**:

- **impurities A, B, C, D, E**: for each impurity, not more than the area of the principal peak in the chromatogram obtained with reference solution (b) (1 per cent);
- **total**: not more than 5 times the area of the principal peak in the chromatogram obtained with reference solution (b) (5 per cent);
**FLUCONAZOLE**

**Fluconazolum**

C₁₃H₁₂F₂N₆O

Mₙ 306.3

**DEFINITION**

2-(2,4-Difluorophenyl)-1,3-bis(1H-1,2,4-triazol-1-yl)propan-2-ol.

**Content:** 99.0 per cent to 101.0 per cent (dried substance).

**CHARACTERS**

**Appearance:** white or almost white, hygroscopic, crystalline powder.

**Solubility:** slightly soluble in water, freely soluble in methanol, soluble in acetone.

It shows polymorphism (5.9).

**IDENTIFICATION**

Infrared absorption spectrophotometry (2.2.24).

**Comparison:** fluconazole CRS.