ANALYTICAL METHOD VALIDATION COMMITTEE FOR NON PHARMACOPOEIAL PRODUCT

DEPARTMENT OF DRUG ADMINISTRATION

Itopride Sustained Release Tablets

Product Specification No.: ISR 074/075/033
Analytical Profile No.: ISR 074/075/ AP 033

Itopride sustained release tablet contains not less than 90% and not more than 110% of the stated amount of Itopride HCl.

1. Identification:

In the assay, the principle peak in the chromatogram obtained with the sample solution should correspond to the peak in the chromatogram obtained with the reference standard solution of Itopride.

2. Dissolution Test:

2.1 Medium : 900ml of 0.1 N HCl
2.2 Apparatus : Paddle
2.3 Rotation : 75 RPM
2.4 Temperature : 37˚C ± 0.5˚C
2.5 Time : 2 hr, 4 hr, 8 hr, 12 hr, 16 hr, 20 hr

2.6 Dissolution Medium Preparation: Dissolve 8.5 ml of hydrochloric acid to 1000 ml with water.

2.7 Standard Preparation:
Weigh accurately about 30 mg of working standard of Itopride HCl in 100 ml volumetric flask. Add 70 ml of dissolution medium and sonicate for 15 min and make up volume with same medium. Dilute 2 ml of this solution to 50 ml with same diluents.

2.8 Sample preparation
Place 1 tablet in each dissolution vessel and run the apparatus as per above condition and collect the sample solution from each jar at specified time. After the completion of the dissolution, filter the resulting solution. Dilute the solution if required with dissolution medium.

2.9 Procedure:
Record the observed absorbance on the UV spectrophotometer at 257nm of the standard solution and sample solution. Calculate the percentage release of Itopride HCl.

2.10 Calculation:

$$\frac{Area\ of\ spl}{Area\ of\ std} \times \frac{conc.of\ std}{conc.of\ spl} \times std\ potency\ \% \times \frac{100-LOD/WC}{100}\ x\ \mathbf{100}\ \%$$

2.11 Limit:

2 hr	20 % - 30 %
4 hr	NLT 35% and NMT 50%
8hr	NLT 55% and NMT 70%
12 hr	NLT 70% of the stated amount
16 hr	NLT 80% of the stated amount
20 hr	NLT 90% of the stated amount

3. Assay:

3.1 Chromatographic system:

Column: 250 X 4.6 mm Octadecylsilane 5µ
Flow rate: 1.0 ml/min
Wave length: 220 nm
Injection volume: 5 µl
Column Oven Temperature: Ambient

3.2 Mobile phase

Buffer: 1 ml of Orthophosphoric acid in 1000 ml of water, adjust pH to 3.0 with Triethylamine.

Mobile phase: Buffer: ACN (70:30)

Mix buffer and Acetonitrile, cool to room temperature and filter the solution through 0.2 micron filter paper using vacuum pump.

3.3 Standard Preparation:

Weigh accurately about 25 mg of working standard of Itopride HCl in 100 ml volumetric flask. Add about 70 ml of mobile phase, sonicate for 5 min and make upto mark with same solvent. Further dilute 5 ml of resulting solution to 50ml with same solvent. Filter through 0.22 micron nylon membrane filter paper.

3.4 Sample Preparation:

Weigh individually 20 tablets and crush the tablet to fine powder. Weigh accurately the powder equivalent to 25 mg of Itopride HCl and transfer into 100 ml volumetric flask. Add about 70 ml of mobile phase, sonicate for about 5 minutes and cool the solution to room temperature and make up the volume to 100 ml with same solvent. Filter the solution. Dilute 5 ml of the resulting solution to 50 ml with same solvent. Filter the solution with 0.22 micron nylon membrane filter paper.

3.5 Procedure:

Inject 5 µl of standard preparation five/six times. The test is not valid unless the column efficiency is not less than 2000 theoretical plates. The tailing factor is not more than 2.0 and the relative standard deviation for replicate injections in not more than 2.0%. After the completion of the system suitability test parameter, inject 5 µl of each of the sample solution separately. Calculate the release of drug in the Itopride SR tablet by using following formula:

3.6 Calculation:

Itopride (%):

$$=\frac{Area\ of\ spl}{Area\ of\ std} \times \frac{conc.of\ std}{conc.of\ spl} \times std\ potency\ \% \times \frac{100-LOD/WC}{100}\ \ x\ \mathbf{100}\ \%$$

3.7 Limit: 90-110% of the stated amount