DEPARTMENT OF DRUG ADMINISTRATION

National Medicines Laboratory

ANALYTICAL METHOD VALIDATION COMMITTEE

Paracetamol and Chlorzoxazone Tablets

Analytical Profile No.: Chl Para 075/076/ AP 025

Paracetamol and Chlorzoxazone Tablets contain not less than 90% and not more than 110% of the stated amount of Paracetamol and Chlorzoxazone.

1. Identification:

1.1 Paracetamol:

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 Paracetamol.

1.2 Chlorzoxazone:

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 Chlorzoxazone.

2. Dissolution Test (Paracetamol and Chlorzoxazone): Determine by liquid chromatography

2.1 Dissolution Parameter

Apparatus: Paddle

Medium: 900 ml, Phosphate buffer pH 6.8

Speed and Time: 60 min at rpm

Temperature: 37˚C ± 0.5˚C

2.2. Chromatographic Conditions:

Same as assay

2.3. Test Solution:

Withdraw a suitable volume of sample from the dissolution vessel after completion of test, filter the solution.

2.4. Reference Solution:

Paracetamol:

Weigh accurately about 100 mg of Paracetamol RS in 100 ml volumetric flask, add 70 ml of methanol, sonicate for 5 minutes and make up the volume with the same solvent.

Chlorzoxazone:

Weigh accurately about 100 mg of Chlorzoxazone RS in 100 ml volumetric flask, add 70 ml of methanol, sonicate for 5 minutes and make up the volume with the same solvent.

Filter the resulting standard and sample solution through 0.22 µm Nylon membrane filter.

Final solution: Pipette 2 ml of Paracetamol and Chlorzoxazone reference solution in 100 ml volumetric flask and dilute with dissolution medium.

2.5 Procedure:

Inject 20 µl of standard and sample solution separately and obtain the respective chromatogram. The test is not valid unless the column efficiency is not less than 2000 theoretical plates, tailing factor is not more than 2.0 and the relative standard deviation for replicate injections is not more than 2.0% and resolution between two peaks should be not less than 2. Measure the peak responses. Calculate the % release of Paracetamol and Chlorxazone.

3.9 Limit:

D. NLT 70 % of the stated amount of paracetamol and chlorzoxazone.

4. Assay (Paracetamol and Chlorzoxazone):

4.1 Chromatographic system

Column **:** C18, (250*4.6 mm), 5 µm

Flow rate **:** 1.5 ml/min

Wavelength **:** 271 nm

Injection volume **:** 20 µl

Detector: UV

Column tempertature: Ambient

Mobile phase: Acetonitrile: Buffer (65:35)

Buffer (Phosphate buffer pH 3.0

4.2 Test Solution:

Weigh individually 20 tablets and crush the tablet into fine powder. Weigh accurately a quantity of powder equivalent to 100 mg of Chlorzoxazone, add 70 ml of methanol, sonicate for 15 minutes and dilute to 100 ml with same solvent, filter. Dilute 2 ml of resulting solution to 100 ml with mobile phase.

4.3 Reference Solution:

Paracetamol:

Weigh accurately about 100 mg of Paracetamol RS in 100 ml volumetric flask, add 70 ml of methanol, sonicate for 5 minutes and make up the volume with the same solvent.

Chlorzoxazone:

Weigh accurately about 100 mg of Chlorzoxazone RS in 100 ml volumetric flask, add 70 ml of methanol, sonicate for 5 minutes and make up the volume with the same solvent.

Filter the resulting standard and sample solution through 0.22 µm Nylon membrane filter.

Final solution: Pipette 2 ml of Paracetamol and Chlorzoxazone standard solution in 100 ml volumetric flask and dilute with mobile phase.

4.4 Procedure:

Inject 20 µl of standard and sample solution separately and obtain the respective chromatogram. Measure the peak responses. The test is not valid unless the column efficiency is not less than 2000 theoretical plates, tailing factor is not more than 2.0.The relative standard deviation for replicate injections is not more than 2.0% and resolution between two peaks should be not less than 2. Measure the peak responses.

5. Other Tests: As per pharmacopoieal requirement.