Government of Nepal
Ministry of Health and Population
Department of Drug Administration
National Medicines Laboratory
Quality and Method Validation Section

Analytical Profile of S-Amlodipine and Losartan Potassium Tablets

Analytical Profile No.: S Amlo Losar 080/81/AP 163

S-Amlodipine and Losartan Potassium Tablets contain not less than 90.0% and not more than 110.0% of the stated amount of S-Amlodipine and Losartan Potassium respectively.

1. Identification:

In the Assay, the two principal peaks in the chromatogram obtained with the test solution correspond to the peaks in the chromatogram obtained with the reference solution respectively.

2. Dissolution: *Determine by liquid chromatography*

2.1 Dissolution Parameters:

Apparatus: Paddle

Medium: 900 ml of 0.01 M of Sodium-Acetate solution, adjusted to pH 4.5 with glacial acetic acid

Speed: 75 rpm

Time: 30 minutes

2.3 Test Solution: After completion of the test withdraw a specimen from the dissolution medium, and filter through a 0.2 µm membrane filter.

2.4 Reference Solution

2.4.1 Reference Solution A: Weigh 70.0 mg of S-Amlodipine Besylate WS accurately and transfer in 100 ml of a completely dried volumetric flask. Add 70 ml of methanol and sonicate to dissolve and make up the volume with the same and mix.

2.4.2 Reference Solution B: Weigh 50.0 mg of Losartan Potassium WS accurately and transfer in 50 ml of a completely dried volumetric flask. Add methanol and sonicate to dissolve and make up the volume with the same and mix.

2.4.3 Reference Solution C: Dilute 1 ml of Reference Solution A and 10 ml of Reference Solution B in 100 ml of volumetric flask and make up the volume with dissolution medium.

2.5 Procedure: Use the chromatographic system described in the Assay using 50 µl as injection volume. Inject the reference solution and the test solution. Calculate the percent release of S-Amlodipine and Losartan Potassium.

2.6 Limit: NLT 70 % (Q) of the stated amount of S-Amlodipine and Losartan Potassium.

3. Assay: *Determine by liquid chromatography*

3.1 Test solution: Weigh 5 intact tablets and transfer them to 100 ml of dry volumetric flask, add 10 ml of water, and 40 ml of mobile phase to 100 ml volumetric flask. Sonicate to dissolve for 10 minutes. Cool the sample solution to room temperature and make up the volume with the mobile phase. Filter the solution. Dilute 5 ml of the above solution with 50 ml of the mobile phase. Now filter it through 0.25-micron filter paper.

3.2 Reference solution:

3.2.1 Reference Solution A: Weigh 25.0 mg of S-Amlodipine Besylate WS accurately and transfer in 100 ml of a completely dried volumetric flask. Add 70 ml of mobile phase and sonicate to dissolve and make up the volume with the same and mix.

3.2.2 Reference Solution B: Weigh 62.5 mg of Losartan Potassium WS accurately and transfer in 50 ml of a completely dried volumetric flask. Add mobile phase and sonicate to dissolve and make up the volume with the same and mix.

3.2.3 Reference Solution C: Dilute 5 ml of Reference Solution A and 10 ml of Reference Solution B in 50 ml of volumetric flask and make up the volume with the mobile phase.

3.3 Chromatographic system:

Column: C8 (4.6mmX 250-mm, 5µm)

Wavelength: 237 nm

Injection volume: 20 µl

Flow rate: 1.5 ml per minute

Column Temperature: 30ºC

Mobile Phase: A mixture of 55 volumes of phosphate buffer pH 5.0, prepared by dissolving 0.68 g of potassium dihydrogen orthophosphate and 4.0 ml of triethylamine in 1000 ml of water, adjusted to pH 5.0 with dilute orthophosphoric acid, 22 volumes of acetonitrile, and 18 volumes of methanol.

3.4 Procedure: Inject the reference solution C five times and test the solutions. 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 for each of the peaks (Losartan Potassium - first peak and S-Amlodipine - second peak) is not more than 2.0%. Measure the peak responses. Calculate the content of S-Amlodipine and Losartan Potassium.

3.5 Acceptance criteria: NLT 90.0% and NMT 110.0% of the stated amount of S-Amlodipine and Losartan Potassium.

4. Uniformity of content: Determine by HPLC as described in the test for assay

4.1 Test Solution: Place one tablet in each of 10 separate 50 ml volumetric flasks. Add 5 ml of water and 25 ml of mobile phase in it and sonicate for 10 minutes to fully disperse and make up the volume to 50 ml with the mobile phase. Filter the solution. Dilute 5 ml of the above solution in 20 ml with the mobile phase. Mix then filter through 0.25-micron filter paper.

4.2 Reference solution: Use the reference solution C prepared in the assay.

4.3 Acceptance criteria: NLT 85.0% and NMT 115.0% of the stated amount of S-Amlodipine.

5. Other tests: As per Pharmacopoeial requirements.