DEPARTMENT OF DRUG ADMINISTRATION
National Medicines Laboratory
ANALYTICAL METHOD VALIDATION COMMITTEE

Dabigatran Etexilate Capsules

Analytical Profile No.: DAB 075/076/AP 037

Dabigatran Etexilate Capsules containnot less than 90 % and not more than 110 % of the stated amount of Dabigatran Etexilate.

1. **Identification:** In the assay, the principle peak in the chromatogram obtained with the test solution should correspond to the peak in the chromatogram obtained with the reference solution of Dabigatran Etexilate.

Tests:

2. Dissolution: *Determine by Liquid Chromatography*

2.1 Dissolution Parameters:

Apparatus:	Basket
Medium:	900 ml of 0.01 N HCl
Speed and Time:	100 rpm and 45 minutes
Temperature:	37˚C ± 0.5˚C

Withdraw a suitable volume of the sample and filter through 0.2 µm membrane filter.

2.2 Test Solution: Use the filtrate.

2.3 Reference Solution: Weigh accurately about 48.0 mg Dabigatran Etexilate (as Mesylate) reference standard in 50 ml volumetric flask. Add about 30 ml of dissolution medium and sonicate for about 15 minutes and make up the volume to 50 ml with dissolution medium. Dilute 2 ml of resulting solution to 20 ml with dissolution medium.

2.4 Chromatographic system:

Column:	C18, (250*4.6 mm), 5 µm
Flow rate:	1.0 ml/min
Wavelength:	341 nm
Injection volume:	10 µl
Column Temp:	27 ºC
Detector:	UV

Mobile phase: Buffer: Acetonitrile (40:60)

Buffer: Take 5 ml Triethylamine in 1000 ml of water, adjust pH to 3.0 with orthophosphoric acid.

2.5 Procedure: Inject the reference solution five times as per above mentioned chromatographic conditions. 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 in not more than 2.0 %. Inject test solution and measure the peak responses. Calculate the % release of the drug.

2.6 Limit: NLT 75 % (D) of the stated amount.

3. Assay: *Determine by Liquid Chromatography*

3.1 Test Solution: Weigh accurately the powder eq. to 50 mg of Dabigatran Etexilate in 100 ml volumetric flask, add 70 ml of methanol & sonicate for 15 minutes, cool and make volume to 100 ml with methanol. Stir for 15 minutes. Dilute 2 ml of resulting solution to 20 ml with diluent. Filter the final solution through 0.2 µm membrane filter.

3.2 Reference Solution: Weigh accurately about 57.65 mg Dabigatran Etexilate (as Mesylate) reference standard in 100 ml volumetric flask. Add about 70 ml of methanol and sonicate for about 10 minutes and make up the volume to 100 ml with same solvent. Dilute 2 ml of resulting solution to 20 ml with diluent. Filter the final solution through 0.2 µm membrane filter.

3.3 Chromatographic system:

Column:	C18, (250*4.6 mm), 5 µm
Flow rate:	1.0 ml/min
Wavelength:	226 nm
Injection volume:	10 µl
Column Temp.:	Ambient
Detector:	UV

Mobile phase: Buffer: Methanol (10:90)

Buffer: 0.1 N Ammonium acetate buffer pH 5.0

Diluent: Buffer: Methanol (40:60)

3.4 Procedure: Inject the reference solution five times as per above mentioned chromatographic conditions. 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 in not more than 2.0 %. Inject the test solution. Measure the peak responses. Calculate the content of Dabigatran Etexilate per capsule.

4. Other tests: As per pharmacopoieal requirement.