TCK 43

KIT FOR THE PREPARATION OF $^{99m}$Tc-EC
(DIAGNOSTIC- FOR INTRAVENOUS USE)

The kit for the preparation of $^{99m}$Tc-EC (Ethylene Dicysteine diacid) is a three component kit and its preparation is based on transchelation method. On reconstituting the kit, as per specified recipe, $^{99m}$Tc-EC solution formed is sterile, pyrogen free and suitable for i.v. administration.

$^{99m}$Tc-EC is used as renal tubular function imaging agent, which is a substitute of $^{131}$I labelled Hippuran and $^{99m}$Tc-MAG$_3$.

Advantages of $^{99m}$Tc-EC over $^{131}$I-Hippuran are

✦ Better radiation safety characteristics of $^{99m}$Tc.
✦ Hospital radio pharmacy based preparation and hence better availability.

$^{99m}$Tc –EC is used as renal function imaging agent for

● Estimation of renal transplant in terms of perfusion, secretion and excretion-aids in predicting early rejection of transplanted kidney.
● Assessment of surgical graft during perfusion phase.
● Follow up for functional assessment of renal transplant.

DESCRIPTION OF THE KIT

Kit consists of three components (vials)

Component-A : 40 mg of calcium/ sodium glucoheptonate and 0.1 mg of stannous chloride dihydrate in freeze-dried form.

Component-B : 1 mg of ethylene dicysteine in freeze-dried form.

Component-C : 1 ml of 0.5M sodium dihydrogen phosphate solution, pH 4-5.
**$^{99m}$Tc-EC Formulation** *

1. Allow the kit vials to attain ambient temperature.

2. Add 2 ml of sterile sodium pertechnetate ($Na^{99m}$TcO$_4$) solution containing up to 50 mCi (1.85 GBq) to Component-A vial (reaction vial). Allow it to stand at room temperature for 10 min.

3. Add 1 ml of water for injection/saline to Component-B vial and mix well.

4. Aseptically transfer the contents of Component-B vial to Component-A vial (reaction vial) and heat in boiling water bath for 10 min.

5. Allow it to stand at room temperature for 5 min.

6. Add 0.5ml of Component-C to the reaction vial to adjust pH to ~ 7.

7. The preparation is now ready for use.

(*For actual formulation, follow Product Recipe)

**DOSAGE AND ADMINISTRATION**

The suggested dose range per patient for i.v. administration of $^{99m}$Tc- EC is 3 mCi - 5mCi (111 MBq to 185 MBq) for renal tubular function imaging.