

^{99m}Tc nanocolloid

Nanocoll[®], Nanoscan[®]

1. Indications

^{99m}Tc-Nanocolloid is approved for:

- Bone marrow scintigraphy
- Inflammation scanning in areas other than the abdomen.
- Lymphoscintigraphy to demonstrate integrity of the lymphatic system, to differentiate between venous and lymphatic obstructions, and to identify the sentinel lymph node draining a primary tumour in melanoma and breast cancer.

Detection of the sentinel node in other diseases like vulvar carcinoma or head and neck cancer is not an approved indication.

2. Preparation

Approved product, see summary of product characteristics (SmPC).

3. Quality control

Approved product, see summary of product characteristics (SmPC) and the European Pharmacopeia.

At least 95% of human albumin colloidal particles have a diameter of 80 nm.

4. Interactions

Iodinated contrast media used in lymphangiography may interfere with lymphatic scanning using ^{99m}Tc-nanocolloid.

5. Contraindications

Hypersensitivity for albumin is reported as a contra indication with the use of ^{99m}Tc-nanocolloid. Furthermore is it discouraged to use the product in patients with a complete blockage of the lymphatic system. An example therefore is pregnancy.

6. Adverse reactions

Hypersensitivity reactions have been reported.

7. Biodistribution & pharmacokinetics

Reticuloendothelial cells in liver, spleen as well as in bone marrow are responsible for blood clearance after *intravenous* injection. A small fraction of ^{99m}Tc radioactivity passes through kidneys and is eliminated in urine.

The maximum concentration in the liver and spleen is reached after about 30 min, but in the bone marrow after only 6 min.

After subcutaneous injection into connective tissue, 30-40% of the administered ^{99m}Tc-colloid is filtered into lymphatic capillaries. The ^{99m}Tc-albumin colloidal particles are then transported along the lymphatic vessels to regional lymph nodes and main lymphatic

vessels, and are finally trapped into the reticular cells of functionary lymph nodes. A fraction of the injected dose is phagocytized at the injection site. Another fraction appears in the bloodstream. A small fraction of ^{99m}Tc albumin colloid passes through kidneys and is eliminated in urine.

8. Stability

After reconstitution shelf life is 6 or 8 h, depending of the product. It has to be stored below 25°C, not in the fridge or in the freezer.

9. Literature

- SmPC NANOCOLL 0.5mg kit for radiopharmaceutical preparation, april 2015.
- SmPC NANOSCAN, 500 micrograms, kit for pharmaceutical preparation.