genetically connected pair of ^{99}Mo /^{99m}Tc is using generators sets, in which accumulation of technetium-99m lasts for period of 22 hours. ^{99m}Tc generators could be subdivided for 3 basic types: chromatographic (sorbtioned), sublimated and extractioned ones.

Extraction technology is concentrated, and it lets to receive solutions with high specific activity even from low level activity molybdenum-99, which is produced by reaction of radioactive capture ^{98}Mo (n,γ) ^{99}Mo form natural molybdenum targets.

Main defects of extracted generators: big size of extractors; necessity to control over procedure of separation extracting substance from water phase with the idea to decrease its wastes with visual or other method; long-time period to proceed preparation (1,5 – 2 hours), mainly because of extracting substance evaporation period; high requirements to personnel.

Pointed defects prevent to use extracted generators directly in medical radiological laboratories.

NPI at TPU developed an extraction-chromatographic generator with the mobile compact extraction device, based on the "black box" principle. Its construction ensures self-regulation of phase division level. Total volume of extraction substance is not more then 80 cm^3 with 110 mm high. It can be transported in safe box without unpacking directly in medical establishments. Frequent extraction with the same low volume of extracting substance provides high level of yield of technetium-99m. Subdividing of radioactive nuclide is going at chromatographic column with Al_2O_3 sorbent.

Extraction-chromatographic generator at the same time then technetium-99m products became lower price let's to solve problem to provide regional clinics, there are middle neutron flux reactors. It's enough to supply 2 times per month molybdenum-99 solution with 2-3 Ci activity to stationary set up into radiological laboratories installations. The market price of sorbtioned generators is above 400-600 $, so expenditures to produce such generator will be repaid during 5-6 months.

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DEVELOPMENT OF METHOD OF TRITIUM LABELING OF PHARMACOLOGICAL PREPARATE OF DROTAVERINE HYDROCHLORIDE (NOSPA)

Kim A.A.,[1] Djuraeva G.T.,[1] Shukurov B.V.[2]
[1]*Institute of Nuclear Physics, Tashkent, Uzbekistan*
[2]*First State Medicine Institute, Tashkent, Uzbekistan*

The method for tritium labeling of pharmacological preparate of drotaverine hydrochloride (no spa) was developed. Drotaverine hydrochloride was labeled by thermally activated tritium in apparatus for tritium labeling. The optimum regime of labeling was selected. The system of purification of tritium labeled drotaverine hydrochloride by thin layer chromatography (TLC) has been developed. The TLC system of purification of tritium labeled drotaverine hydrochloride was developed. Tritium labeled preparation of drotaverine hydrochloride was purified by TLC on silicagel in system isopropanol: ammonia: water (8:1:1). We found appearance of additional fractions in tritium labeled preparation of drotaverine hydrochloride that testifies to partial transformation of dritaverine hydrochloride during procedure of labeling. Application of TLC for purification of tritium labeled preparation allows to purify completely drotaverine hydrochloride of by-products. The output of purified tritium labeled preparation of drotaverine hydrochloride was about 25 %. The received preparation had specific radioactivity - 3,2 MBq/mg, radiochemical purity of a preparation was 95 %.

TLC purification seems inexpensive, fast and suitable for purification of tritium-labeled drotaverine hydrochloride. Thus developed method allows obtain tritium labeled preparation of drotaverine hydrochloride (no - spa), suitable for medical and biologic researches.

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PRODUCTION OF I-125 RADIOISOTOPE IN SODIUM IODIDE SOLUTION AND ITS APPLICATION

Nabardi B., Gourani M.
Atomic Energy Organization, Iran

APPLICATION: The Radioisotope Iodine-125 has rather long half-life, and high dose range of Gamma radiation.It will be used in two cases,in our radioisotope production departmen:

1-To label Radioimmunoassay Kits (RIA): T3, T4 and TSH for IN_VITRO investigation of Thyroid glands, in our Nuclear Medical Center in IRAN. We just started to set up Hotcell facilities and in cell equipments to supply Iodine-125 for our Radioimmunoassay Group.In this section. The above Iodine-125 will be used for labelling of their Radioimmunoassay products for Thyroid functions and also for screening of newborns for Thyroid deficiency.

2-We have also just start, the make and supply particular granules of Iodine-125 by Silver coated Iodine-125 directly and also indirectly, on the Paladium, coated Silver Wire to be used in Brachytherapy applications.

PRODUCTION: After filling Target with 15g of natural Xe gas by excellent technology and closed in leak-tight allowing reactor irradiation. The target is irradiated in a nuclear reactor for 3 weeks optimally at a thermal neutron flux around $\Phi = 1*10^{14}$ $n.cm^{-2}.s^{-1}$.After transferring irradiated target to hotcell, The aluminium capsule is opened by putting it into the punching apparatus and pushing the needle into the bottom of the aluminium capsule by turning the handle counter-clockwise. When the needle punches the aluminium. The Xe gas is released into the chimney and the I-125 radioisotope is adsorbed on the inside wall of the aluminium capsule. After this the opened aluminium capsule is pulled off from the needle by turning the handle clockwise. The opened capsule is ready to distillation. Preparation of the