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11. Radiopharmacy.

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11.01 Lipiodol-131I: improvement on the labeling process.

Hepatocellular carcinoma (HCC) is one of the most common malignant tumors. Lipiodol, an iodinated ester derived from poppy-seed oils, has been found to be selectively retained in hepatic tumors. Recently, hepatic intra-arterial iodine-131 lipiodol therapy has been successfully developed and tested, the selective retention of lipiodol suggests its potential as a carrier for chemotherapeutic or radiotherapeutic agents. Substituting the 127I of lipiodol with 131I easily performs labeling with radioiodine, since lipiodol is an iodinated ester containing 37 - 38 % iodine by weight.

The aim of this study is to present the labeling of lipiodol with 131I, the quality control methods and the development of a heating device in the "hot cell", increasing the yield of labeling in routine production.

The labeling is carried out by isotopic exchange, using 3700 - 5550 MBq / 0.200 - 0.300 ml of 131I-Na and the separation of the labeled compound from the free 131I was performed through a solvent extraction technique, using ethylic ether. After evaporation of the ether phase, the final product is sterilized by 0.22 mm Millipore filter. The radiochemical purity is evaluated by paper chromatographic system in Whatman 3 MM (10 x 2 cm), petroleum ether and ethylic ether (2:1) as a solvent (R_f 131I-lipiodol = 0.9-1.0 and R_f 131I- = 0.0-0.3). The sterility analysis is determined in different culture medium, by the microbiology procedures outlined in the pharmacopoeias, incubated at room temperature and at 35° C \pm 2. The pyrogenicity is evaluated using the "in-vitro" Limulus test (LAL).

In more than 10 productions, 3.800 MBq / batch of 131I-Lipiodol was produced, 740 - 925 MBq / ml with 80 % yield of labeling and 99,9 % of radiochemical purity. The microbiological and pyrogen tests were negative in all samples. The product was stable "in-vitro" at room temperature, for more than 15 days.

parameters for labeling ciprofloxacin with technetium-99m. | 11.03 Direct labeling of chemotactic peptide fomlelfnleyk with radioiodine. | 11.04 Labelling of vasoactive intestinal peptide (vip) with 131-iodine. Preliminary biological distribution studies in animal. | 11.07 Use of chloroform/alcohols mixture as mobile phase to alternative chromatographic systems for quality control of MIBI[Tc-99m]. | 11.08 67-Ga-gallium citrate production. | Print

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