

Summary

Development of the Chromatography Analysis of Liquid Trapping ^{99m}Tc -Technegas Using Jikei Impinger

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We developed the equipment which collected ^{99m}Tc -Technegas into liquid (saline) and named this equipment an impinger of Jikei University Style. We further developed a technique using this impinger to evaluate its formation qualitatively by paper chromatography. Utilizing this technique we investigated various factors that caused environmental contamination by ^{99m}Tc -Technegas, including changes over time in a Technegas generator. It was demonstrated that upon getting mixed with oxygen gas to the argon gas, the Technegas generator induced contamination of ^{99m}Tc -Pertechnegas easily, leading to changes in its

formation. The change of formation quality of the Technegas generator with the lapse of time was also revealed. These findings indicated that the maintenance and inspection of the equipment were important.

This method is a simple and easy technique for the evaluation of ^{99m}Tc -Technegas formation, making it possible to perform the quality control of examination agent and the Technegas generator.

Key words: Technegas, Pertechnetate, Quality control, Impinger, Chromatograph analysis.