

Summary

Short Time Bacterial Endotoxins Test for Positron Emission Tomography by Means of Positively Charged Filters

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Positron emission tomography (PET) radiotracers have very short physical half-lives. It is hard to complete a bacterial endotoxins test prior to release from medical institutes. For endotoxin quantitative determination, limulus amoebocyte lysate (LAL) reagent and kinetic-turbidimetry system were previously developed. We investigated the possibility of a short time test by means of positively charged filters. As a result of this study, the effects of positively charged filters on endotoxin removal were over 99.5% for [^{18}F]FDG and [^{18}F]NaF, which were contaminated with the indicated

concentration of endotoxin. Combining this filter and the kinetic-turbidimetric method, it was possible to complete a bacterial endotoxins test in 5 min prior to the patient's administration. This test should be required prior to release for PET radiopharmaceutical quality control. It has been suggested that this combination is a good method for this purpose.

Key words: Positron emission tomography, Bacterial endotoxins test, Positively charged filters, Kinetic-turbidimetric method.