

Dynamic behaviour of selected PET tracers in embryonated chicken eggs.

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Abstract

Positron emission tomography/computer tomography (PET/CT) is an established method in preclinical research in small animal disease models and the clinical diagnosis of cancer. It combines functional information of the positron-emitting biomarker with the anatomical data obtained from the CT image. Thus, it allows for 4D in vivo investigation of biological processes. Recently, PET/CT was used to monitor bone growth of chicken embryos using ^{18}F -fluoride as a bone-seeking tracer. We are interested in investigating the adequacy of additional PET/CT tracers in chicken embryos as an in vivo model system. For this reason, we evaluated several positron emitting compounds typically used in clinical tests or if these were not commercially available, we synthesised them. We studied the properties of these ^{18}F - and ^{68}Ga -labelled tracers and of ^{64}Cu -chloride in catheterised eggs via small animal microPET/CT. 2-Deoxy-2- ^{18}F fluoroglucose (^{18}F FDG) was primarily absorbed at the sites of bone growth. ^{64}Cu chloride and a ^{68}Ga -labelled amyloid-fibril-binding antibody accumulated in the liver, while the ^{68}Ga -albumin desferrioxamine conjugate signal in liver decreased over time. These results indicate that these biomarkers can

potentially be used for the monitoring of biological processes in chicken eggs as an animal model.

Beteiligte Forschungseinheiten

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