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RESEARCH AREA

With the development of molecular oncology, more and more molecular targets appear, which led to the need for new and target-specific radiopharmaceuticals. During the preclinical studies of nuclear medicine, the binding of a radionuclide-labelled molecule is examined with the PET (Positron Emission Tomography) imaging equipment. These imaging devices provide quantitative biological information and images of the internal state of the body in a non-invasive manner with high sensitivity. Our main research area is the development of radiopharmaceuticals that can efficiently identify malignancies and tumor-associated processes (e.g. neo-angiogenesis) in the living organism. The subject of our research is the development of radionuclides, which can be diagnostic or therapeutic (e.g. alpha emitter), as well as the synthesis of the targeting molecule, which binds to a receptor expressed by a tumor.

TECHNIQUES AVAILABLE IN THE LAB

In our laboratories we offer to learn the methods of the production and quality control using analytical tests of radiopharmaceuticals intended for experimental and human use, as well as the examination of experimental radiopharmaceuticals in in vitro cell systems and in vivo animal models by using a preclinical positron emission tomograph. The methods of biodistribution studies applied in the field of experimental oncology and performed on tumor-bearing rodent models induced by various transplantation techniques can also be mastered.

SELECTED PUBLICATIONS

Farkasinszky, G., Dénes, N., Rácz, S., Kis, A., Péli-Szabó, J., Opposits, G., Veres, G.,Balkay, L., Kertész, I., Mező, G., Hunyadi, J., **Trencsényi, G.**(2022) In Vivo imaging of Ischemia/Reperfusion-mediated Aminopeptidase N Expression in Surgical Rat Model Using Ga-NOTA-c(NGR). **In Vivo 36:** 657-666.

Kis, A., Dénes, N., Péli-Szabó, J., Arató, V., Beke, L., Matolay, O., Enyedi, K., Méhes, G., Mező, G., Bai, P., Kertész, I., **Trencsényi, G.** (2021) In Vivo Molecular Imaging of the Efficacy of Aminopeptidase N (APN/CD13) Receptor Inhibitor Treatment on Experimental Tumors Using 68Ga-NODAGA-c(NGR) Peptide. **BioMed Res Inter 2021(3):** 6642973.

Kis, A., Dénes, N., Péli-Szabó, J., Arató, V., Jószai, I., Enyedi, K., Rácz, S., Garai, I., Mező, G., Kertész, I., **Trencsényi, G.** (2020) In vivo assessment of aminopeptidase N (APN/CD13) specificity of different 68 Ga-labelled NGR derivatives using PET/MRI imaging. **Int J Pharm 589:** 119881.

Kis, A., Péli-Szabó, J., Dénes, N., Vágner, A., Nagy, G., Garai, I., Fekete, A., Szikra, D., Hajdu, I., Matolay, O., Méhes, G., Mező, G., Kertész, I., **Trencsényi, G.** (2020) In vivo Imaging of Hypoxia and Neoangiogenesis in Experimental Syngeneic Hepatocellular Carcinoma Tumor Model Using Positron Emission Tomography. **Biomed Res Int 2020(18):** 4952372.

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