INNOVATION PARTNERSHIPS
UNIVERSITY OF MICHIGAN

Synthesis of an Image-Able Labeled Cholesterol

TECHNOLOGY NUMBER: 7744

OVERVIEW

Radioactive tracing agent for PET imaging of adrenal adenomas, ectopic cholesterol production, subclinical Cushing's syndrome, cholesterol metabolism/distribution, and vulnerable plaque

- Higher sensitivity and resolution imaging for currently established indications using NP-59
- Lower radiation exposure than existing methodologies as well as a same-day imaging protocol

BACKGROUND

Positron Emission Tomography, or PET, in combination with radioactive tracing agents, is a standard medical imaging technique with a wide range of applications in oncology. Adrenal PET imaging utilizes the scintiscanning agent NP-59, which was developed at the University of Michigan. NP-59 is used to evaluate the adrenal gland to detect Cushing's syndrome, primary aldosteronism, hyperandrogenism, and euadrenal tumors. However, NP-59 has major limitations including suboptimal imaging resolution and a long biological half-life that leads to multi-day protocols and multiple patient visits, contributing to cost and burden of the procedure. Due to the clinical importance of the data that can be obtained, NP-59 has continued use despite these limitations. Still, the need exists for improved methods for adrenal gland evaluation with NP-59.

INNOVATION

To improve diagnostic accuracy, image quality, and shorten the procedure to one patient visit Michigan Medicine researchers developed the fluorine-18 PET imaging analogue of NP-59, [18F]FNP-59. This agent has excellent biophysical properties for PET imaging which significantly improve spatial resolution of the obtained images and lead to lower radiation exposure to the patient. In addition, this fluorine for iodine substitution reduces biological half-lives of PET imaging agents. A faster clearance leads to a clean background of the image for improved analysis by a radiologist, and it also allows for significant improvements of the imaging protocol. Overall, the [18F]FNP-59 agent provides higher resolution, better quality PET images while minimizing patient vital organs exposure to radiation as well as time and resources saving same-day imaging protocol.

PATENT APPLICATION

Technology ID
7744

Category
Materials
Engineering & Physical Sciences

Inventor
Allen Brooks
Benjamin Viglianti
Milton Gross
Peter Scott
Stefan Verhoog
Stephen Thompson
Wade Winton

Further information
Jeremy Nelson
jernelso@umich.edu

Learn more