Fluorinated Cholesterol Compounds for use as PET Imaging Agents

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Researchers at the University of Michigan have developed a suite of compounds and chemical syntheses for the production of 18F-radiolabeled cholesterols, which may be used for positron emission tomography (PET).

The compounds are analogs of NP-59, an iodine-containing norcholesterol that has been used for SPECT imaging to detect functional endocrine abnormalities associated with adrenal pathologies, such as adrenal adenomas, aldosteronism, subclinical Cushing’s syndrome, and ectopic cholesterol production, among others. The new PET imaging agents can be used to detect the same pathologies, but with more favorable dosimetry, no need for suppression protocols, improved image quality, and potentially expanded imaging applications related to cholesterol biodistribution and utilization.

Production of 18F-radiolabeled cholesterols has been challenging because of an overall dearth of late stage fluorination chemical approaches and a tendency for the known approaches to lead to unintended rearrangements, eliminations and other undesired reactions. The current technology avoids these complications and produces the desired product in good yield and high radiochemical purity using methods available to a clinical chemistry lab.

This technology is patent pending and available for licensing. U-M is seeking input from corporate partners interested in commercializing the technology. U-M has modest translational funding at its disposal to further demonstrate and develop this exciting new technology.
Inventors

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