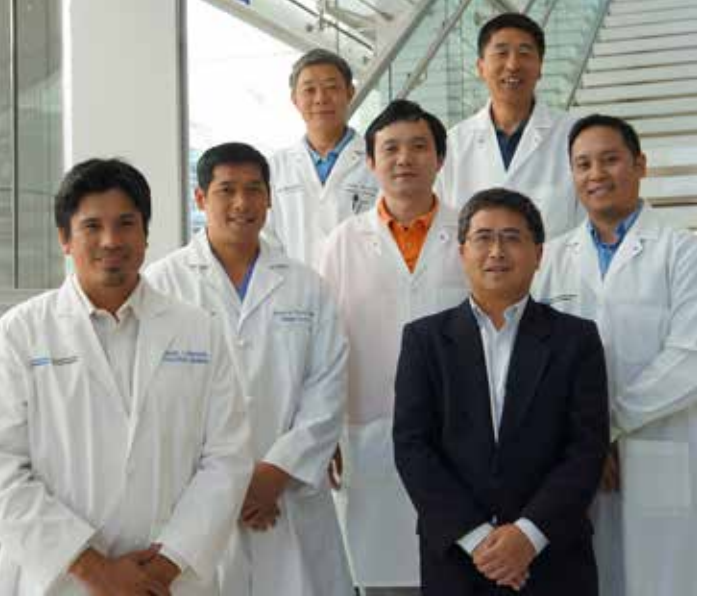

The Houston Methodist Research Institute Cyclotron and Radiopharmaceutical Core facility can produce Positron Emission Tomography or PET tracers with half lives ranging from 2 to 110 minutes, including tracers that are not commercially available. In addition to the commercially available [^{18}F]FDG compound, the Houston Methodist cyclotron facility can produce rare ^{15}O,^{13}N, ^{11}C, ^{64}Cu, and other compounds such as [^{11}C]PIB, [^{18}F]FLT, and [^{18}F]FDOPA.

Cyclotron and Radiopharmaceutical Core

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Email: myu@houstonmethodist.org
713.441.2921

houstonmethodist.org/cyclotron

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HOUSTON METHODIST RESEARCH INSTITUTE

CYCLOTRON AND RADIOPHARMACEUTICAL CORE

Cyclotron and Radiopharmaceutical Core

The Houston Methodist Research Institute Cyclotron and Radiopharmaceutical Core produces radiopharmaceuticals for research and medical applications. The facility operates a GE PETrace cyclotron that produces tracers for Positron Imaging Tomography or PET. These clinical grade tracers are available to customers throughout the Texas Medical Center.

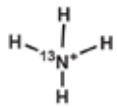
PET APPLICATIONS

The on-site cyclotron facility enables Houston Methodist to engage in research studies that require rare custom tracers. The facility can produce multiple doses for a patient in a single day, and can offer cutting-edge PET imaging for patients that is not available elsewhere in the Texas Medical Center such as:

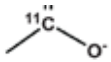
- Oncology: PET imaging of types of cancer that are not possible with traditional [^{18}F]FDG-based imaging, including imaging of prostate, renal, and certain types of brain cancers.
- Neurology: PET is the most sensitive tool for specific diagnosis of Alzheimer's disease and other dementias, and is used for locating epilepsy seizure foci prior to surgery.
- Cardiology: The cyclotron facility produces tracers containing ^{15}O and ^{13}N that are the leading tools for PET detection of coronary artery disease and diseased tissue that will benefit from revascularization.
- New drug development: PET can facilitate the speed of drug development with noninvasive measurement of in vivo biodistribution and pharmacokinetic profiles. With PET, only very low amounts of the experimental drug are administered, far below toxicity levels, enabling clinical human studies that expedite FDA approval pathways.

PET RADIOPHARMACEUTICALS

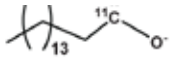
The facility produces [^{18}F]FDG and other compounds:



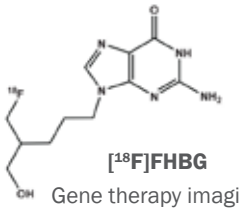
[^{13}N]Ammonia
Cardiac perfusion



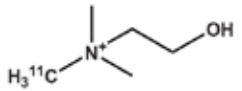
[^{11}C]Acetate
Cardiac perfusion



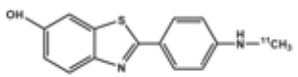
[^{11}C]Palmitate
Fatty acid, beta-oxidation



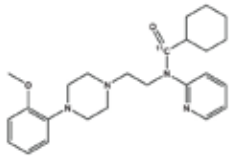
[^{18}F]FHBG
Gene therapy imaging



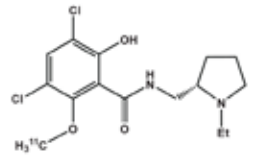
[^{11}C]Choline
Prostate cancer imaging



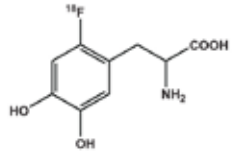
[^{11}C]PIB
Beta-amyloid plaque imaging for Alzheimer's disease



[^{11}C]WAY-100,635
5-HT$_{1A}$ receptor imaging, for depression, anxiety, and schizophrenia



[^{11}C]Raclopride
Dopamine D2 receptor-imaging for age and mental disease-related motor and cognitive function



6-[^{18}F]Fluoro-L-DOPA
Brain tumor imaging, over 96% sensitivity

Our Specialized Services

- **cGMP production**
- **Nuclear pharmacy**
- **^{18}F, ^{15}O, ^{13}N, ^{11}C, ^{64}Cu compounds**
- **GE PETrace 16.5 MeV negative ion isochronous cyclotron**
- **9 hot cells**
- **Rapid transport system to PET scanner and research floors**
- **GE automated production and quality control procedures**
- **GE radiopharmaceuticals preparation and distribution equipment**