THERANOSTICS INSIGHTS

^{18}F-FES

Oncidium foundation

Radioisotope

F-18, Fluorine-18
Halogen
T ½ : 109.77 min

Production

In cyclotron, from oxygen-18
Reaction: ^{18}O (p,n) ^{18}F

Radiation

Positron (β+)

Use

PET imaging of estrogen receptor (ER)-positive breast cancer lesions.
Proposed use in other ER-positive cancers.

Target/Mechanism

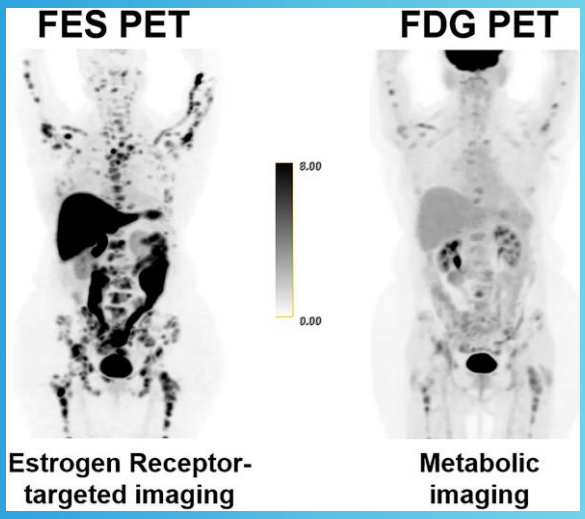
^{18}F-FES is radiolabeled form of estrogen. It binds selectively to estrogen receptors present on breast cancer cells and other ER-positive cancer cells. The binding of ^{18}F-FES to ER allows for the visualization and quantification of ER-positive lesions using PET imaging.

Insight

^{18}F-FES plays a role in personalized medicine for breast cancer patients. By offering a non-invasive means of evaluating the estrogen receptor status of tumors, it enables clinicians to make informed treatment choices.

In May 2022, the FDA approved the imaging agent 16α-^{18}F-fluoro-17β-fluoroestradiol (^{18}F-FES).
Other countries have also approved the use of ^{18}F-FES like France and South Korea.

The American National Comprehensive Cancer Network (NCCN) Guidelines now recommends the use of ^{18}F -FES positron emission tomography (PET) for use in determining estrogen receptor (ER) status during staging workup in patients diagnosed with recurrent or metastatic breast cancer.



Comparison of ^{18}F-FES and ^{18}F-FDG in patient with invasive lobular carcinoma

Source: Ulaner et al. JNM 2021, 62 (3) 326-31