THERANOSTICS INSIGHTS

^{177}Lu-PSMA I&T

Oncidium foundation

Radioisotope

Lu-177, lutetium-177
Transition metals
T ½ : 6.71 days

Production

In nuclear reactor:
Direct: 177Lu (n, γ) 177Lu nca
Indirect: 176Yb (n, γ) 177Yb (β-) 177Lu ca

Radiation

Beta particles (β-)
Gamma photons (γ)

Use

In study for the treatment of metastatic castration-resistant prostate cancer (mCRPC).

Target/Mechanism

^{177}Lu-PSMA binds to the receptor PSMA and is internalized by the cell. The β- radiation emitted by Lu-177 damages the DNA and kills cancer and metastasis cells.

Insight

The SPLASH Trial (NCT04647526) is testing ^{177}Lu-PNT2002 (^{177}Lu-PSMA I&T) against the current standard treatment (either abiraterone or enzalutamide) before chemotherapy.
The purpose of this study is to evaluate the efficacy and safety of ^{177} Lu-PNT2002 in patients with metastatic castration-resistant prostate cancer who have progressed following treatment with androgen receptor axis-targeted therapy (ARAT).
The study consists of 3 phases: Dosimetry, Randomized Treatment, and Long-term Follow-up.

Part 1: 25 patient safety and dosimetry

Part 2: 390 patient randomization:
Arm A - 177Lu-PSMA | **Arm B -** enzalutamide or abiraterone
Patients in Arm B who experience radiographic progression may crossover to receive 177Lu-PSMA

Part 3: All patients will be followed in long-term follow-up for at least 5 years from the first therapeutic dose, death, or loss to follow up.