THERANOSTICS INSIGHTS

^{177}Lu-anti-PD-L1 sdAb

Oncidium foundation

Radioisotope

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

Production

In nuclear reactor:
^{176}Yb (n, γ) ^{177}Yb (β-) ^{177}Lu

Radiation

Beta particles (β-)
Gamma photons (γ)

Use

In First-In-Human clinical testing for Metastatic Non-small Cell Lung Cancer (NSCLC)

Target/Mechanism

Tumors that express PD-L1 are able to evade the immune response. ^{177}Lu-anti-PD-L1 sdAb is a nanobody (single domain monoclonal antibody) tagged with the radioactive isotope ^{177}Lu. The accumulation of ^{177}Lu-anti-PD-L1 sdAb in the tumor induces DNA breakage that leads to cell death.

Insight

A first-in-human (Phase 0/1), open-label study consisting of an Imaging Period and a Treatment Period in eligible NSCLC patients who are positive for the biomarker PDL-1 (NCT06305962). This is the first trial that studies a radiopharmaceutical that targets PD-L1.

N patients: 23 participants

Phase 0: Imaging period (im) using 10 mCi of ^{177}Lu-RAD204im, as well as radiation dosimetry to assess the safety of the drug.

Phase I: Treatment period (tr), up to cycles every 6 weeks, with gradual dose increases (30 mCi and 40mCi) of ^{177}Lu-RAD204tr.