RS-2025-25454770

Development of a Therapeutic Radiopharmaceutical using Alpha Nuclide Targeting mCRPC (Metastatic Castration Resistant Prostate Cancer)

CellBion Co., Ltd.

CellBion

ONCOLOGY | **Preclinical**

Product Type	RPT
Indication	Metastatic Castration-Resistant Prostate Cancer (mCRPC)
Target	Prostate-Specific Membrane Antigen (PSMA)
MoA(Mechanism of Action)	• **Selective binding:** The Test Article (TA) binds PSMA, which is overexpressed on prostate cancer cells. • **Cell entry & kill:** After receptor binding, the TA–PSMA complex is internalized; emitted alpha particles (high-LET) cause clustered DNA double-strand breaks, leading to apoptosis and related cell-death pathways. • **Localized dose:** Due to the short range of alpha radiation (50–100 μm), damage to surrounding normal tissues is minimized..
Competitiveness	• TA leverages the higher linear energy transfer (LET) of alpha particles to produce dense, hard-to-repair DNA damage, offering the potential for **greater antitumor effectiveness than beta emitter–based RLT.** • The very short tissue range (~50–100 μm) helps confine dose to tumor sites and **limit exposure of surrounding normal tissues.** • These features position alpha emitter–based RLT as a promising **alternative to current beta emitter–based therapies**—including development for advanced mCRPC after progression on Lutetium-177–based RLT (e.g., [^177Lu]-PSMA).
Development Stage	Preclinical
Route of Administration	intravenous (IV) administration