Docket #: S25-418

Novel Dual Chelator Targeted Radioligand Therapy of Metastatic Castration Resistant Prostate Cancer (mCRPC)

Metastatic castration resistant prostate cancer (mCRPC) is an advanced stage of prostate cancer managed with a combination of various therapeutics. Radioligand therapy is one commonly used treatment that is designed to target tumor-specific markers with a radioactive isotope to improve therapeutic payload. While radioligands significantly delays tumor growth compared to alternative hormonal therapies used for mCRPC, the use of radiation limits the therapeutic dose that can safely administered without increasing toxicity in healthy organs.

The Song Lab at Stanford has developed a novel gastrin-releasing peptide receptor (GRPR) targeted radioligand that incorporates a dual-chelator compound and delivery structure for radiotherapy to treat mCRPC. Unlike conventional radioligand, where each ligand molecule delivers one radionuclide payload, the invention is designed to carry two chelators. This enables the ligand to deliver two radionuclide payloads per receptor, effectively doubling the radiation dose to the tumor. Additionally, the most common dose limiting normal organs in targeted radioligand therapy are bone marrow and the kidneys due to non-specific radioligand circulation and clearance. The dual chelator radioligand will increase tumor radiation dose but not toxicity to the normal organs, thereby expanding the therapeutic window. Besides applications to mCRPC, the radioligand therapy platform could be tailored to target other types of cancers.

Stage of Development
Research – in vitro, pre-clinical

Applications

- Prostate cancer
- Neuroendocrine cancer
- Thyroid cancer
- Radioligand therapy

Advantages

- Dual-chelator platform that increases therapeutic dose without increasing toxicity
- Tailored to target different tumor-specific markers

Innovators

- Hong Song
- Arutselvan Natarajan

Licensing Contact

Sam Rubin

Licensing Associate, Life Science

Email