

Head-to-Head Pilot Study in Prostate Cancer Validates Radiopharm's Development of First-in-Class Terbium-161 Radiotherapeutics

- *Publication of first head-to-head data shows superior Therapeutic Index with Tb161 vs Lu177 in 6 metastatic castration-resistant prostate cancer patients.*
- *This Pilot study validates Radiopharm's leadership in developing next generation Tb-161 radiotherapeutics for the treatment of advanced cancers.*
- *Through partnership with TerThera, Radiopharm remains the first public company that disclosed a secured Tb-161 supply for the development of multiple programs.*

Sydney, Australia – 28 February 2024 – Radiopharm Theranostics (ASX:RAD, “Radiopharm” or the “Company”), a clinical-stage biopharmaceutical company focused on developing innovative oncology radiopharmaceuticals for areas of high unmet medical need, is pleased to share a recent publication by Schaefer-Schuler *et al.* on the results of 6 metastatic Castration-Resistant Prostate Cancer (mCRPC) patients treated with 161Tb vs 177Lu¹.

The study demonstrated that 161Tb-PSMA-617 delivers markedly higher tumor-absorbed doses compared to 177Lu-PSMA-617, whereas the absorbed doses of the relevant organs at risk were only slightly higher. 161Tb-PSMA-617 delivered a radiation dose to tumor lesions that was on average 2.4 times higher than that of 177Lu-PSMA-617. This strongly supports Terbium-161 (Tb-161) as a promising candidate for use in the radiotherapeutic targeting of advanced cancers.

Tb-161 is a highly promising isotope for targeted cancer treatment due to its unique characteristics of radiation emitted, which includes both Auger electrons and short-range beta particles. The beta radiation travels only a few millimetres and Auger electronic emission has a higher linear energy transfer that travels less than the width of a single cell. Previously, Tb-161 has shown excellent bioequivalence presenting a biodistribution comparable to currently used radiopharmaceuticals, and its superiority to Lutetium-177 is potentially due to Auger effect increasing potency and efficacy in selectively destroying tumor cells while leaving surrounding healthy tissue largely unaffected.^{2,3}

Radiopharm's highly innovative pipeline includes two Tb-161-based radiotherapeutics, RAD 402 and 502, which target advanced prostate cancer and osteosarcoma respectively. For both assets, Tb-161 will be linked to two proprietary monoclonal antibodies (RAD 402) and (RAD 502). On August 24th 2023, Radiopharm announced an [expanded agreement](#)⁴ with [TerThera](#) to supply the Company with Tb-161, securing the sourcing of this relatively scarce isotope. As such, Radiopharm is the first public company globally with access to Tb-161 for the clinical development of multiple assets, based on publicly available information.

“Tb-161 holds remarkable promise in nuclear medicine and oncology,” said Riccardo Canevari, CEO and Managing Director of Radiopharm Theranostics. “It has the strong potential to advance anti-

¹ Schaefer-Schuler, A., Burgard, C., Blickle, A., Maus, S., Petrescu, C., Petto, S., Bartholomä, M., Stemler, T., Rosar, S.E.a.F. (2024). [161Tb]Tb-PSMA-617 radioligand therapy in patients with mCRPC: preliminary dosimetry results and intra-individual head-to-head comparison to [177Lu]Lu-PSMA-617. *Theranostics*, 14(5), 1829-1840. www.thno.org/v14p1829.pdf

² McNeil, S.W., Van de Voorde, M., Zhang, C. *et al.* *EJNMMI radiopharm. chem.* 7, 31 (2022).

³ Müller C, Umbricht C, Gracheva N, Tschan V, Pellegrini G, Bernhardt P, et al. *Eur J Nucl Med Mol Imaging.* 2019;46(9):1919–30.

⁴https://investorhub.radiopharmtheranostics.com/announcements/4397992?utm_campaign=announcement_4397992&utm_source=rad_hub&utm_medium=share

**ASX ANNOUNCEMENT
28 FEBRUARY 2024**



tumor efficacy for not only primary tumors, but also micrometastatic disease. We are delighted to continue our partnership with TerThera and hopefully bring this highly differentiated technology to eligible advanced cancer patients.”

About Radiopharm Theranostics

Radiopharm Theranostics is a clinical stage radiotherapeutics company developing a world-class platform of innovative radiopharmaceutical products for diagnostic and therapeutic applications in areas of high unmet medical need. Radiopharm has been listed on ASX (RAD) since November 2021. The company has a pipeline of six distinct and highly differentiated platform technologies spanning peptides, small molecules and monoclonal antibodies for use in cancer, in pre-clinical and clinical stages of development from some of the world’s leading universities and institutes. The pipeline has been built based on the potential to be first-to-market or best-in-class. The clinical program includes one Phase II and three Phase I trials in a variety of solid tumour cancers including breast, kidney and brain. Learn more at [Radiopharmtheranostics.com](https://radiopharmtheranostics.com).

Authorized on behalf of the Radiopharm Theranostics Board of Directors by Executive Chairman Paul Hopper.

For more information:

Riccardo Canevari
CEO & Managing Director
P: +1 862 309 0293
E: rc@radiopharmtheranostics.com

Matt Wright
NWR Communications
P: +61 451 896 420
E: matt@nwrcommunications.com.au

Follow Radiopharm Theranostics:

Website – <https://radiopharmtheranostics.com/>
Twitter – <https://twitter.com/TeamRadiopharm>
Linked In – <https://www.linkedin.com/company/radiopharm-theranostics/>
InvestorHub – <https://investorhub.radiopharmtheranostics.com/>

