User project report

Palladium/rhodium chemistry for next generation radiopharmaceutical therapy (PATH)

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2. Context of the project (800 characters max. including spaces)

To develop ^{103}Pd-based Auger targeted radionuclide therapy for the selective irradiation of small cell clusters

3. Results and discussion (1000 characters max. including spaces)

^{103}Pd was produced at DTU, Denmark and shipped to the University of Bordeaux (2 shippings). The University of Piemonte Orientale (Pr Lorenzo Tei) developed new chelates to bind both Pd and its decay product Rh. The first shipping allows to find the best radiolabeling conditions (buffered around pH 3) and the most relevant chelate called AAZ3S. A neurotensin derivative peptide was also synthesized and attached with AAZ3S for subsequent radiopharmaceutical characterization. Specific activity up to 2 MBq/nmol was reached. Both the ^{103}Pd-AAZ3S and the ^{103}Pd-peptide were found to be stable at room temperature for at least 72h. In vivo studies in normal mice showed distinct biodistribution profile of free ^{103}Pd, ^{103}Pd-AAZ3S and ^{103}Pd-peptide

4. Conclusions (800 characters max. including spaces)

^{103}Pd-chelation is feasible and open the door of Auger-based targeted radionuclide therapy

5. Involvement of the PRISMAP services (600 characters max. including spaces)

^{103}Pd has been produced at DTU, Denmark

6. Feedback to PRISMAP (600 characters max. including spaces)

The project was ran smoothly with no issues

7. Publications and other dissemination activities (conferences etc.)

An abstract is scheduled to be submitted at the 8th theranostics word congress 2026

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Appendix 1. Dissemination guidelines for user projects as agreed in the signed User Agreement

Dissemination rules

Only user groups that are allowed to disseminate the results which they have generated under the project may benefit from the access, unless they are working for SMEs.

For each user group project, a publishable project summary and a publishable summary of the results will be published on the European Union Horizon 2020 PRISMAP project website www.prismap.eu. The publication of results in journals or at conferences is strongly encouraged.

To ensure the long-term sustainability of the PRISMAP initiative, proper recognition of the contributing facilities, their services and the involved persons is necessary. All participating PRISMAP facilities shall be acknowledged in the publication. Acknowledgement and co-authorship of PRISMAP staff members who participated in the experiment shall be considered according to the research field best practices and verified with the PRISMAP Technical Manager before any publication.

The user group shall contact the PRISMAP Technical Manager 30 days prior to submission of publications or other communications of results that were obtained by making use of services provided by PRISMAP (radionuclides delivered or medical services provided). The Technical Manager will communicate to the user group the list of PRISMAP facilities and persons that have contributed to each specific project and the way this contribution must be acknowledged in the publication/communication or where co-authorship is required to reflect specific scientific contributions.

Users must comply with Horizon 2020 dissemination rules (i.e. acknowledge that their work was financially supported by the European Union's Horizon 2020 Research and Innovation Programme by including the following acknowledgement: "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101008571 (PRISMAP)"), and grant open access to resulting publications and related data.

Dissemination shall take place only once legitimate interests regarding intellectual property have been safeguarded. A maximum publication delay of 90 days may be granted for this purpose.

Acknowledgements

The list of name(s) to be mentioned in the acknowledgment section is sent to the technical manager by the main contact of the involved facilities.

A general sentence will be added by the corresponding author of the article (user side):

"The authors would like to thank the members of the PRISMAP consortium and of the PRISMAP user selection panel, coordination and management team for their advice and support."

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