

PACT4EYE: Innovative Photoactivated Ruthenium Chemotherapy to treat eye cancer

Sylvestre Bonnet

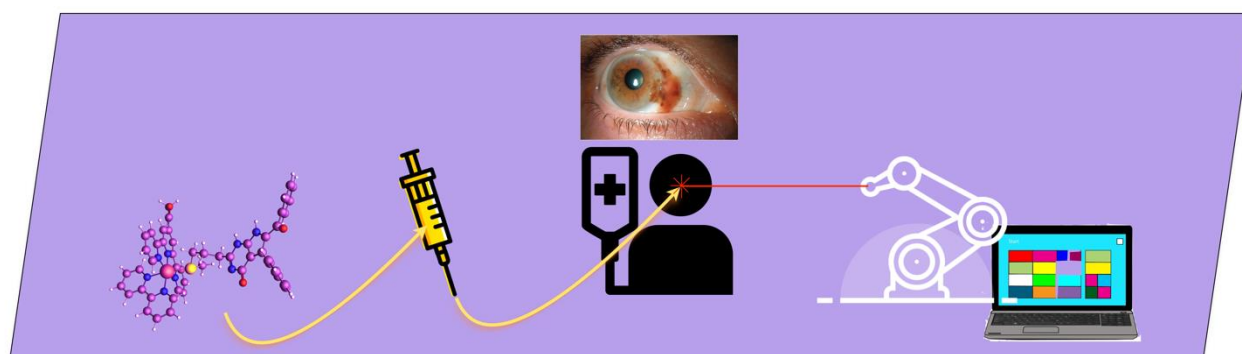
Biography

Sylvestre Bonnet is full professor in photobioinorganic chemistry at the Leiden Institute of Chemistry at Leiden University. He obtained his PhD in 2005 at the University of Strasbourg, France, in the group of Nobel Laureate Jean-Pierre Sauvage. He then moved to The Netherlands as a postdoc, where he successively worked in the groups of Gerard van Koten (Utrecht), Jan Reedijk (Leiden), and Antoinette Killian and Bert Klein Gebbink (Utrecht). Between 2009 and 2014 he completed a Tenure Track position in Inorganic Chemistry at Leiden University, where he was tenured in 2015 and became full professor in 2020. He obtained several prestigious grants, including a Starting Grant from the European Research Council (2013), a Transition grant from the European Innovation Council (2023), and three young investigator grants (VENI 2008, VIDI 2012, VICI 2019) from the Dutch Organisation for Scientific Research (NWO). He is alumni of the Young Academy of Europe, of which he was a board member (2017-2020). His expertise lies at the crossing point between bioinorganic chemistry, photochemistry, and lipid membranes. His current research interests are anticancer photoactivated chemotherapy, supramolecular photocatalysis, and upconversion.



Abstract

Uveal melanoma (UM) is a rare tumor of the eye; its current treatment leads to lower quality-of-life for the patients (sight loss), 50% of whom eventually die from metastases to the liver. The PACT4EYE project aims at the first clinical development of a new technique called photo-activated chemotherapy (PACT) for the treatment of UM. It makes use of a new, patented ruthenium-containing prodrug (Ru-MTI) that must be activated by green or red light to become toxic.



ERC is acknowledged for a Starting grant and two Proof-of-Concept grants for Sylvestre Bonnet. EIC is acknowledged for a Transition grant to Sylvestre Bonnet.

References

- [1] S. Bonnet, *Dalton Trans.* **2018**, 47, 10330 and *J. Am. Chem. Soc.* **2023**, 145, 23397.
- [2] L. Bretin, Y. Husiev, V. Ramu, L. Zhang, M. Hakkennes, S. Abyar, A.C. Johns, S. Le Dévédec, T. Betancourt, A. Kornienko, S. Bonnet*, *Angew. Chem. Int. Ed.* **2023**, 63, e202316425
- [3] V.H.S. van Rixel, V. Ramu, A.B. Auyeung, N. Beztsinna, D.Y. Leger, S.T. Hilt, S.E. Le Dévédec, T. Yildiz, T. Betancourt, M.B. Gildner, T.W. Hudnall, V. Sol, B. Liagre, A. Kornienko, S. Bonnet, *J. Am. Chem. Soc.* **2019**, 141, 18444.