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Ruthenium-peptide conjugates for targeted phototherapy

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Citation

Zhang, I. (2023, July 4). *Ruthenium-peptide conjugates for targeted phototherapy*. Retrieved from <https://hdl.handle.net/1887/3628436>

Version: Publisher's Version

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Note: To cite this publication please use the final published version (if applicable).

LIST OF PUBLICATIONS

Zhang, L., Wang, P., Zhou X.Q., Bretin, L., Rivas, E.P., Bretin, L., Husiev, Y., Wijaya, L., Biver, T., Sun, W.,* & Bonnet S.,* (2022). A pair of chiral integrin-targeted ruthenium-peptide conjugates as photoactivated anticancer drugs. Submitted to *Journal of the American Chemical Society*.

Chen, Q., Cuello-Garibo, J.A., Bretin, L., **Zhang, L.**, Ramu, V., Aydar, Y., Batsiun, Y., Bronkhorst, S., Husiev, Y., Beztsinna, N., Chen, L., Snaar-Jagalska, B.E.,* & Bonnet, S.* Photosubstitution in a trisheteroleptic ruthenium complex inhibits conjunctival melanoma growth in a zebrafish orthotopic xenograft model. *Chemical Science*, 2022, 13(23), pp.6899-6919.

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Zhang, L., Zhao, G., Bretin, L., Husiev, Y., Boyle, A., Snaar-Jagalska, B. E., and Bonnet, S.,* Influence of the diimine spectator ligands on the photochemistry and anticancer properties of integrin-targeted macrocyclic ruthenium-peptide conjugates. *Manuscript in preparation*.

Zhang, L., Bronkhorst, H., Husiev, Y., Bretin, L., and Bonnet, S.,* Diastereomers of Ru-MRGDM complexes for photoactivated chemotherapy: synthesis and biological properties. *Manuscript in preparation.*

Zhang, L., Ilario, R., and Bonnet, S.,* Ruthenium-Nuclear Localization Signal peptide conjugates as photoactive chemotherapy drugs. *Manuscript in preparation.*

CURRICULUM VITAE

Liyan Zhang was born in Puyang, Henan province of China on February 27, 1993. After graduation from Puyang Second Senior High School in 2011, she went to Zhengzhou University (Zhengzhou) for her bachelor's study and obtained her bachelor's degree majoring in Chemical Engineering and Technology in 2015. As part of the top 10% BSc students, she was admitted the same year to China University of Petroleum (East China) for her master's study under the supervision of Prof. Jiqian Wang. In 2018, she obtained her Master's degree in Biochemical Engineering with a Master thesis entitled "Synthesis and application of nanoscale platinum catalyst using peptide as soft-template". The same year, she successfully received a PhD scholarship from the Chinese Scholarship Council (CSC) and went to The Netherlands to start her PhD studies at Leiden University.

Since 2018 she has been member of the group Metals in Catalysis, Biomimetics & Inorganic Materials (MCBIM), where she developed ruthenium-peptide conjugates for targeted phototherapy under the supervision of Prof. dr. Sylvestre Bonnet and Prof. dr. Elisabeth Bouwman. During her PhD studies, she collaborated with Prof. dr. Wen Sun (Dalian University of Technology) and Dr. Peiyuan Wang (Chinese Academy of Sciences), Prof. dr. B. Ewa Snaar-Jagalska (Institute of Biology, Leiden University). She supervised 2 Bachelor students and 1 Master student during her PhD research in Leiden.

Parts of her research described in this thesis were presented at the following conferences:

Posters

Chemistry as Innovating Science (CHAINS) 2019, Eindhoven, Netherlands, Dutch Research Council (NWO)

Chemistry as Innovating Science (CHAINS) 2021, Eindhoven, Netherlands, Dutch Research Council (NWO)

Oral presentation

A series of integrin targeted ruthenium-RGD conjugates for anticancer phototherapy, *1st International Conference on Metal-Binding Peptides: Methodologies and Applications*, Nancy, France, 2022.

ACKNOWLEDGEMENT

These years in Leiden were a period of mixed emotions for me, during which I struggled and suffered, but also experienced many happy moments. However, as I am writing this page at this moment, all that remains in my heart are feelings of calm and gratitude. Looking back to this journey, I am grateful for the opportunities I have had to connect with so many excellent friends, colleagues, and mentors at different times.

Firstly, I want to thank my supervisor, Prof. dr. Sylvestre Bonnet. His wisdom, thoughtfulness and encouragement impressed me a lot. As my daily supervisor, his generous support has been the most important factor enabling me to complete this thesis. Many thanks to my second promotor Prof. dr. Elisabeth Bowman for her guidance and suggestions during work discussion as well as her help for the revisions of my thesis.

I would like to express my deep gratitude to the Chinese Scholarship Council (CSC) for financial support (grant No.201806450039) of my study in Leiden. I also want to thank Leiden University for offering me a such wonderful workspace.

The support of all my collaborators is highly appreciated. Prof. Alexander Kros and Dr. Aimee Boyle are thanked for helping me with peptide synthesis in my first year. Dr. Peiyuan Wang (Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences) and Prof. dr. Wen Sun (Dalian University of Technology) are acknowledged for their *in vivo* mice study reported in Chapter 3. Dr. Sylvia Le Dévédec and Dr. Lukas Wijaya (Leiden Academic Centre for Drug Research, Leiden University) are thanked for their assistance in confocal microscopy experiments. Prof. dr. Ewa Snaar-Jagalska and Gangyin Zhao (Institute of Biology, Leiden University) are kindly acknowledged for performing *in vivo* zebrafish experiments reported in Chapter 4. Dr. Bram Slütter is thanked for training me in the technique of flow cytometry. My colleagues Dr. Xuequan Zhou, Dr. Ludo Bretin, Yurii Husiev, Ehider Polanco Rivas, Corjan van der Griend are wholeheartedly acknowledged for their help with various experiments. My students Riordan Ilario, Hildert Bronkhorst and Trevor Dalrymple are thanked for their contributions to some experiments reported in this thesis. I would also like to express my thanks to Yvonne Snellenberg for her support, Dr. Sipeng Zheng for performing mass spectrometry and ICP-MS measurements, and for his guidance in HPLC purification. Charlotte Woerde is also thanked for performing MS measurements. Dr. Karthick Sai Sankar Gupta and Alfons Lefeber are thanked for their help during NMR measurements. Hans van der Elst is thanked for performing HR-MS measurements. I want to specially thank Dr. Sina Götzfried,

Wessel Verbeet, Dr. Irene Regeni, Dr. Ludo Bretin, Yurii Husiev, Dennis Dam and Lan Wang who helped improving my thesis. All my colleagues at MCBIM: Dr. Dennis Hetterscheid, Dr. Agnese Amati, Dr. Erik van Geest, Vasiliki Tsina, Valeriia Andreeva, Dr. Chengyu Liu, Ehider Polanco Rivas, Dr. Irene Regeni, Dr. Ramu Vadde, Dr. Ludo Bretin, Dr. Sina Götzfried, Selda Abyar, Matthijs Hakkennes, Lan Wang, Yurii Husiev, Aswin Reena Chandrababu, Wessel Verbeet, Christian Marvelous, Ashok Ramakrishnan, Dennis Dam, Kyra Herrema, Marleen Hoefnagel, Phebe van Langevelde, Dana Rademaker, Sjoerd Verbeek: the time I spent with you means a lot to me. Besides research, I would like to thank my friends in The Netherlands: Chen Lu, Chen Ying, Fu Yu, Huang Luo, Jiao, Jia Yuqing, Liu Feiyan, Li Zirui, Wang Deyi, Yang Shengxiang, Zeng Ye, Zhang Diyu, it has been a great time to share daily thoughts and delicious food together with you.

At last, I want to say thanks to my family: without their support I would not have been able to finish my study. Also, I am grateful for the support from my best friends in China, Liu Meng and Zhao Qi during our 15-years friendship. My most special gratitude goes to my boyfriend, Xuecheng, I am so glad to have you in my life.

I know a book cannot summarize all the moments I had in the past years in Leiden. For me this period does not only mean a PhD degree, it is all about the courage and fearlessness I obtained, which will benefit me in the rest of my life.

Thank you all who will read this thesis, I wish you all the best in the future!

谢谢!

Liyan Zhang