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Ruthenium-peptide conjugates for targeted phototherapy

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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

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Liyan Zhang