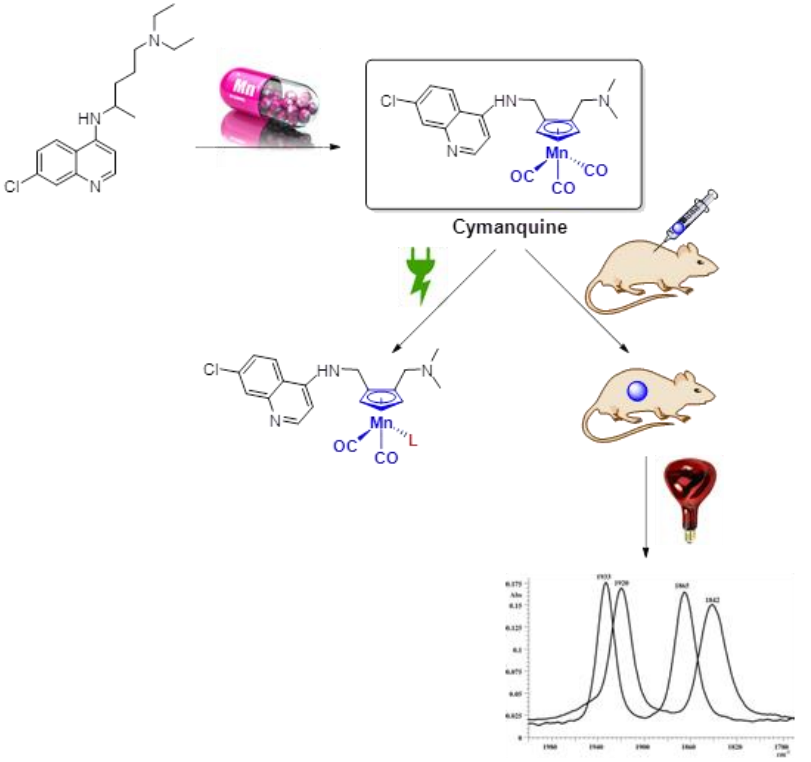
UNIVERSITY of GREENWICH

EU Horizon2020 - £20,989 (23 530 €) per annum – Deadline 8/10/2018

Medicinal Electrosynthesis: A New Approach to Drug Design



Originally identified as an antimalarial therapeutic, chloroquine is being repositioned as anticancer agent for many deadly cancers where, at higher doses, its use in combination with traditional therapeutics results in higher efficacy by inhibiting autophagy. Despite its promise, chloroquine has limitations, high doses are needed since it fails to exhibit cytotoxicity in the acidic extracellular microenvironments created within solid tumours. Through a multidisciplinary approach, relying on electrosynthesis and organometallic chemistry, we have successfully designed and patented an organometallic chloroquine analogue, "Cymanquine" that showed to be 10 times more active than chloroquine, even as a single agent. Cymanquine represents an exciting discovery, but it would be incorrect to assume that this is the optimal structure. In this proposal, we will use electrosynthesis to prepare Cymanquine analogues and we will conduct a structure-activity-relationship study to probe for how variations in structure affect the redox behaviour as well as the biological activity and identify one or more lead compounds suitable for pre-clinical studies. Finally, the biomechanisms of these new drugs will be investigated in detail using innovative bio-IR imaging methods.

We are now looking for a highly motivated PhD. researcher to join our team and explore further the synthetic potential of these radicals.

The candidate:

The project would be suitable for anyone with a strong background in synthetic chemistry and interest in the medicinal chemistry as well as in drug development. The project will be supervised by Dr Kevin Lam (http://www.lamresearchgroup.com)

Funding Notes

DTA3/COFUND participants will be employed for 36 months with a minimum salary of (approximately) **£20,989 (23 530 €) net per annum.** Tuition fees will be waived for DTA3/COFUND participants who will also be able to access an annual DTA elective bursary to enable attendance at DTA training events and interact with colleagues across the Doctoral Training Alliance(s). This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 801604.

Contact:

For informal enquiries, please contact Dr Kevin Lam: **k.lam@greenwich.ac.uk**

Application should be sent using the online portal: https://unialliance.ac.uk/dta/cofund/how-to-apply/

Mention the name of the project on the application "Medicinal Electrosynthesis: A New Approach to Drug Design"