



New Copper Complexes to Combat Antimicrobial Resistance

Fully Funded PhD Studentship at Durham University, UK



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Historic City in the North of England



New Copper Complexes to Combat Antimicrobial Resistance

A PhD studentship position is available in the groups of Dr. James W. Walton and Dr Karrera Djoko at Durham University to synthesise copper complexes and study their activity as carbapenemase inhibitors to overcome antimicrobial resistance.

Carbapenems are broad-spectrum β -lactams and are last resort antibiotics. Hence, it is concerning that resistance to carbapenems has now emerged and disseminated worldwide. Resistance often arises from the action of carbapenemases, some of which can be inhibited by the action of copper salts. These copper salts are poorly membrane permeable and high doses are often needed to achieve an antibacterial effect. In this project, the PhD candidate will design and synthesise novel ligands and their corresponding copper complexes that show improved inhibition of the metal-dependent carbapenemases. With the new copper complexes in hand, the student will assist in biological testing of the potential inhibitors.

A successful PhD student will spend the majority of their time in the synthetic chemistry laboratory (Walton group), synthesising organic ligands and their copper complexes. There will also be opportunity to contribute to the biological testing of new complexes. An opportunity to spend some time at the IIT Kanpur in India for further biological testing is also available to the successful candidate. The successful candidate should have knowledge of organic and inorganic synthetic chemistry. Previous experience in microbiology and/or coordination chemistry is not necessary, but the candidate should have a keen interest in biological applications of chemistry. For further information see the websites of the [Walton Group](#) and [Djoko group](#).

This position is funded by the Global Challenges Research Fund. As such, applicants must come from a [Development Assistance Committee List](#) country. The full list can be found [here](#).

The successful candidate must have a good Masters degree (or equivalent) in Chemistry or a closely-related subject. They must also be proficient in English language. For example, a IELTS score of 6.5 (no component under 6.0) is required. Other languages certificates may also be accepted. See a full list [here](#).

The position is available from 1st February 2019 and will last 3 years. Candidates must be able to start on or close to this date.

Interested applicants should contact Dr James W. Walton (james.walton@durham.ac.uk) and Dr Karrera Djoko (karrera.djoko@durham.ac.uk) with a cover letter and CV, including the names of two suitable referees. Please use "Copper and Carbapenem Durham GCRF CDT Studentship" as an email subject.

Application Deadline: 30th Sept 2018, however, early applications are strongly advised as the position may be filled if a suitable candidate is identified prior to this deadline.