PhD studentship in Understanding and overcoming chemotherapy resistance in Mixed Lineage Leukaemia (MLL) (Reference Code: HSB2016_PhD_MTE1)

Director of Studies: Dr Maria Teresa Esposito (m.esposito@uel.ac.uk)

Applications are invited for a fully-funded PhD research studentship in the Medicine Research Group, School of Health, Sport and Bioscience, University of East London. Our vision is to deliver excellent research that has a direct impact on the health and wellbeing of individuals in the local, national and international context. The successful applicant will work in a Doctoral Research Training Programme in Biomedical Science with an internationally recognised team and will become a member of an interdisciplinary UK academic health sciences network (UCLPartners) and international networks.

Project description:

The Medicines Research Group (MRG) embraces translational medicine themes across the biomedical disciplines. The aim of this PhD project will be to understand and overcome chemotherapy resistance in Mixed Lineage Leukaemia (MLL). Leukaemia is the most common childhood cancer. Chromosomal translocations involving the *MLL* gene (also known as *KMT2*) represent the most highly aggressive and drug-resistant form of Acute Lymphoblastic Leukaemia (ALL) and Acute Myeloid Leukaemia (AML). *MLL* translocations are found in 80% of infant ALL and account for 5% and 10% of adult and childhood AML. Despite our growing knowledge about *MLL*-leukaemia, the stem cell origin and the *MLL*-genetic signature, treatment is still mainly based on aggressive chemotherapy with or without bone marrow transplantation and the prognosis, with the exception of a small subset of patients, is poor. *HoxA9* has been identified as a key target and the single most critical prognostic factor for *MLL* leukaemia. Dr Esposito recently showed that HoxA9 induces resistance to DNA damage repair inhibitors (PARPi) by activating Homologous Recombination (HR) -DNA damage repair (Esposito et al Nature Medicine 2015). This PhD project will continue this research and will investigate the effect of HoxA9 on molecular mechanisms of chemotherapy resistance, in particular on DNA damage repair and cell cycle progression, with the aim to design novel therapeutic approaches. For this purpose, a panel of human *MLL* cell lines and primary human and mouse leukemic cells will be used for *in vitro* experiments. *In vivo* studies will be performed in collaboration with Dr Bela Wrench at Queen Mary University of London facilities.

The successful applicant will be given training in all aspects of the project and will be encouraged to develop as a motivated and independent researcher by benefitting from the knowledge, experience and the multidisciplinary focus of the supervisory team, including Prof. Mike Seed who has an outstanding experience in drug targeting and investigation of molecular and pharmacological processes in inflammation, rheumatic disease, and cancer.

The Award

The studentship is open only for Home/EU applicants and it is for a period of three years, subject to satisfactory yearly progress and provides an annual stipend of £16057 pa; payment of tuition fees and some research costs.

Requirements

Applicants should ideally have an excellent honours science degree (e.g. 1st class or international equivalent) and a Master's degree in Cancer Biology, Molecular Biology or Biomedical Science. Evidence of undertaking a practical, primary research project is essential. Sound knowledge of Cancer Biology or experience with cell culture, biological assays, real-time PCR, western blot, immunofluorescence, flow cytometry and in vivo work will be an advantage. Applicants must also have excellent organisational and communication skills with a very high level of written and spoken English. Where English is not the applicant's first language, a minimum IELTS Academic English score of 7.0 overall with a minimum of 6.5 in all components is required.

The holder of the studentship will be expected to:

Complete their doctoral studies and submit their dissertation within 3 years.
Prepare papers for submission to peer-reviewed journals.
Participate in and contribute to research activities of the School and activities relevant to their sponsors.

Application Procedure
Informal enquiries about the studentship should be addressed to the specific Director of Studies stated above.

Applicants should apply online via the following link

http://www.uel.ac.uk/landing-pages/hsbstudentships/???

When completing your online application please state the project title and reference code in your personal statement. Applications will only be accepted via the online application form. Please also use the reference code in all correspondence. The closing date for completed applications is 1000am Thursday 16th June 2016. Interviews will be held in the week of the 4th July 2016. Start date will be September 2016.