

Science and Technology in Medicine



Research Project Proforma (School of Medicine)

Research Title:	Anticancer drugs discovery
Keywords (up to 5)	Cancer, natural products, HPLC, mass spectrometry, cell culture based assays
Supervisor: Job Title: Department: Email Address: Telephone: Webpage link:	Wen-Wu Li Lecturer in Analytical Biochemistry School of Medicine / Institute for Science and Technology in Medicine w.li@keele.ac.uk appointments through email https://www.keele.ac.uk/istm/staff/wen-wuli/
Type of projects offered (delete as appropriate)	Intercalation (1 year)/Studentship (4-8 weeks)/Pharmacy

(1) Outline the broad aims of your research and its medical relevance (150 words):

Ovarian cancer is the second major cause of death in the gynaecologic cancers within the UK and US. Presently the standard treatment for ovarian cancer entails the use of chemotherapy drugs paclitaxel and carboplatin after aggressive surgical reduction in order to prolong the patient's life for multiple years. However, prolonged use of platinum-based chemotherapy often leads to drug resistance, which causes the ovarian cancer patient to relapse and potential death. Therefore there is an urgent medical need for breakthrough drugs with an effective therapeutic impact on ovarian cancer. Phytochemicals (plant-derived natural products) have been used for

thousands of years as treatment for various diseases, because of their huge chemical diversity and wide range of biological activities. My group aims to search for new anticancer drugs from medicinal plants. Medical/Pharmacy students or postgraduate training on MSc and MPhil programmes are welcomed to join us.

My laboratory is based in the Guy Hilton Research Centre, Hartshill campus, School of Medicine.

(2) Indicate the skills/techniques the student will learn (100 words)

You will learn how to extract plant natural products, culture cancer cells in vitro and assay whether the plant extracts have anti proliferation effects on cancer cells. Next, you will learn how to purify the bioactive compounds from a complex mixture of the extract using HPLC. Finally, you will learn how to identify its chemical structure using modern spectroscopic techniques such as mass spectrometry and NMR. In addition, you will learn how to plan and perform experiments, using GraphPad/Excel software for the statistical and data analysis, and written and oral presentation skills.

Please submit this form electronically to Prof Divya Maitreyi Chari on d.chari@keele.ac.uk