Strategies for combining vascular-targeted treatments for cancer with radiotherapy

Supervisors: Dr Chryso Kanthou and Professor Gillian Tozer

Project:
Radiotherapy is used to treat at least 50% of cancer patients. However, tumours can recur following radiotherapy, and when they do they are more aggressive and metastatic than their naïve counterparts. Combining novel vascular targeting approaches with radiotherapy has the potential to improve treatment outcome, but very little is known about their interactions at the molecular, cellular and tumour level. Our goal is to better understand the interaction between these two modalities that could translate this knowledge into improved clinical therapies.

The student will investigate the role of radiotherapy in the recruitment of stroma cells to tumours. Presence of stroma cells such as activated myofibroblast and pericytes in tumours is associated with poor prognosis and resistance to treatment with vascular targeting agents. The work will use co-culture systems between mesenchymal stroma cells, with potential to differentiate into myofibroblasts and pericytes, with irradiated tumour cells. In vitro experimental findings will be validated using in vivo tumour models and clinical samples.

The project will provide an excellent opportunity to acquire knowledge in a wide range of techniques related to translational cancer research.

Funding:
PhD studentships provide funds for four years to cover:
- A stipend of £19,000 per year
- Research expenses
- PhD and university fees (UK/EU student fees only)
- Costs for attending conferences if presenting data

Enquiries:
Interested candidates should in the first instance contact Dr Chryso Kanthou, C.Kanthou@sheffield.ac.uk

Eligibility:
Science graduates with a minimum 2:1 qualification.

How to apply:
Please submit via email to Sara Watkinson (s.watkinson@sheffield.ac.uk) with your CV, two references and a cover letter outlining the following:

- Which project(s) you are applying for (maximum 3 projects),
- How your skills and experience are suited to the project(s) you are applying for,
- Any research experience you have obtained,

Please note if you are applying for multiple projects please only submit one application outlining the projects you are applying for in one application.

www.shef.ac.uk/faculty/medicine-dentistry-health/graduateschool/prospectivepg/vacancies/crukycr/index.html

Closing date: 22 November 2011