Development and application of proteomic methods for N-terminome analysis in the diagnosis and treatment of colorectal cancer

Supervisors: Dr Bernard Corfe, Dr Caroline Evans, Prof Phillip Wright, Dr Josselin Noirel

Project: The concept of the “cancer degradome” – the modified proteome in cancer cells arising as a result of dysregulated proteolytic activity, has implications for the activity, treatment and diagnosis of cancer. Novel forms of proteins, specific to cancer cells, arising from proteolysis offer diagnostic opportunities and may have altered functionality relative to the parent protein, representing druggable entities with low bystander toxicity. Quantitative comparative proteomic strategies for analysis of N-termini are emerging, particularly iTRAQ-Tails. Sheffield is an internationally leading centre for iTRAQ and the purpose of this project is to develop the iTRAQ-Tails methodology and trial other modifications of iTRAQ, then to apply optimised workflows to a simple cancer proteome that we have shown is more degraded than control tissue. The long-term goal is to develop analytical tools for complex cancer proteomes from samples yielded in Sheffield Cancer Research Centre (SCRC). This project will also seek to modify and enrich the bioinformatics pipeline for identification and quantification of proteins.

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 Bernard Corfe:
b.m.corfe@shef.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.

Closing date: 22 November 2011