

Dr Ashley Martin PhD

Senior Research Fellow

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About

Ashley manages the Proteomic Facility within the College of Medical and Dental Sciences to provide a core resource for the College. In this role Ashley interacts with many researchers to help in production of samples for proteomic analysis.

With a background in lipid metabolism and cell signalling Ashley moved into cancer related work when it became clear that many of the lipids he was working on were fundamentally involved in the cancer process.

Ashley has been funded by CRUK for Biomarker discovery and he has also been active with Charity in raising funds by giving talks at many CRUK sponsored events.

Qualifications

- PhD 1986, Nottingham University
- BSc (Hons) Biochemistry and Physiology, Leeds University

Biography

Having left school Ashley trained as a Medical Laboratory Scientific Officer at the City Hospital in Nottingham after which he entered Leeds University to Study for a Combined degree in Biochemistry and Physiology.

Dr Martin then completed a PhD ("The role of Phosphatidate Phosphohydrolase in the regulation of Glycerolipid production in rat liver") at Nottingham University Medical School and then moved to the University of Alberta, Edmonton in Canada when his supervisor moved the group. Ashley worked in Canada for over 6 years before taking a post in the Dept. of Clinical Oncology at Birmingham University to focus on the role of lipid signalling in Cancer.

After 4 years of this work Dr Martin moved to the University of Wolverhampton as a Senior Lecturer before returning to Birmingham to set up and manage the Proteomics Facility in the Medical School at Birmingham University.

Teaching

- B.Med.Sci.
- B.Med.ClinSci
- Clinical Oncology MSc/PG Dip

Postgraduate supervision

Ashley is interested in supervising Doctoral research students in the following areas:

The development of proteomic strategies to address fundamental questions in Biomedical Science

The use of mass spectrometry to measure bioactive lipids in disease processes.

Proteomic and phosphoproteomic changes that occur during the acquisition of drug resistance in cancer patients

Research

Research Theme

Structural Biology and Biomarkers

Research interests

Ashley's research is focussed on the development of sample preparation strategies to enhance the use of mass spectrometry based proteomic approaches to address questions asked by biomedical scientists. The techniques available include the identification and quantitation of proteins, in both complex and enriched samples using label-free and isotopic labelling strategies.

The affinity purification of protein complexes to study "interactomics" is a technique that has proven successful in several collaborations. In addition protocols to identify and quantify phosphoproteins/phosphopeptides in complex samples have been developed. More recently the analysis of biologically active lipids using mass spectrometry

has been started.

In addition the use of mass spectrometry based approaches for biomarker research is a focus of the work, for example, to try and identify diagnostic markers for a range of cancers.

Studies to identify changes in the phosphorylation pattern of proteins in samples taken from renal cancer patients treated with Sunitinib (a kinase inhibitor) before and after the patients develop resistance to treatment are underway. Work to describe proteomic changes in human epithelial breast cancer cells when they become resistant to Tamoxifen has been performed and the involvement of several novel proteins implicated in the process are being investigated.

Publications

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