

Research interests

Cancer progression is accompanied by biochemical changes in proteins and by changes in the tumour microenvironment (TME). The tumour microenvironment comprises other cell types like fibroblasts, immune cells, stem cells or endothelial cells that are part of the tumour mass and the secreted proteins that form the extracellular matrix. This TME supports tumour growth and allows metastasis, the most life threatening event in cancer. We are studying the changes in O-linked glycosylation of proteins expressed by the cancer cells, and the effect they have in:

- 1- the cancer cell transcriptional program and epigenetic changes
- 2- their role in cell:cell communication in the TME
- 3- and in cell:extracellular matrix interactions

Specific changes in O-glycosylation occur early in tumour development and affect most of the proteins that localise to the plasma membrane or are secreted by the cells. Our research shows that, among other effects, changes in O-glycosylation lead to a change in the transcriptional response upon stimulation of growth factor receptors and the differential expression of extracellular signalling molecules that has an effect in the cancer cell environment. Glycomimetic drugs that mimic the interaction of glycans and proteins are effective drugs and some of them are already in clinical trials for the treatment of AML and myeloma.

We are using a combination of cell, molecular biology and bioinformatic techniques to find biomarkers that can be used in the clinic:

- 1- as novel biomarkers for diagnostic or prognosis
- 2- develop new tumour specific therapies, including co-adjuvant treatments to target components of the microenvironment or
- 3- develop gene signatures to stratify patients for treatment according to their molecular expression signature and associated prognosis.

Qualifications

Doctor of Philosophy, "Schizosaccharomyces pombe Rgf3p is a specific Rho1 GEF that regulates cell wall β -glucan biosynthesis through the GTPase Rho1p", University of Salamanca

Award Date: 1 Jan 2008

Projects

Investigating how RhoH regulates cancer cell migration

Tajadura, V. & Ridley, A.

CRUK Cancer Research UK

1/05/2011 → 31/07/2011

Awards

Investigating how RhoH regulates cancer cell migration

Tajadura, V. & Ridley, A.

CRUK Cancer Research UK: £4,390.00

1/05/2011 → 31/07/2011