Celso Reis

IPATIMUP/i3S Univ. of Porto

Bilateral Meetings

- Wednesday (10:00 - 12:30)

Description

The group “Glycobiology in Cancer” focus on the role that glycosylation plays in human cancer aiming at the understanding of the molecular mechanisms controlling alterations of glycosylation that are important in the process of carcinogenesis and cancer progression.

The main research projects are:

1) Characterization of the molecular mechanisms underlying the glycan-mediated adhesion of Helicobacter pylori and the understanding of the importance of the host-pathogen crosstalk for the chronic infection and gastric carcinogenesis.

2) Evaluation of the role of glycans and glycan-binding proteins in cancer and pre-cancerous conditions addressing the molecular mechanisms controlling glycosylation of key molecules involved in cancer development and progression, and identification of novel glycan-based biomarkers for clinical application.

The group applies multidisciplinary approaches combining molecular and cell biology, biochemistry, genomics, (glyco)proteomics and animal models for understanding and addressing key mechanisms and functions played by glycosylation in cancer.

RESEARCH

The group member’s main achievements include:

- The understanding of how H. pylori modulates the host gastric mucosa glycophenotype and the evaluation of the impact of these glycosylation modifications on bacterial adhesion.
- The biological implications of glycosylation in H. pylori adhesion and infection using human

clinical samples and genetically modified animal models.

- The design of novel glycan-based therapeutic strategies for H pyloriinfection.
- The characterization of the role of glycans and the glycosyltransferases controlling their biosynthesis in key cancer related molecules, such as E-cadherin, TKR and CEACAMs, providing novel biomarkers with clinical applications.
- The characterization of glycosylation impact in the pathogenesis of pre-malignant conditions, such as inflammatory bowel disease.
- The elucidation of the sialylated glycans biosynthesis and the role of glycan-binding proteins in cancer progression.

Organization Type
University / R&D Institution
Offer

Biomarkers and targets

Biomarkers of cancer;
Novel target treatments