

## **Project Title: A Novel Role of Rab GTPases in Breast Cancer**

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The main purpose of this work is to study the expression of Rab GTPases in breast cancer, which is one of the most prevalent cancers worldwide. Several Rabs have been implicated in the progression of multiple cancers as important players in intracellular trafficking, which could become potential biomarkers. Therefore, we are studying the role of Rab11a and b, Rab25 and Rab27a and b in invasive ductal carcinoma (IDC). Our preliminary work with Rab25 was done in a sample of 83 formalin-fixed paraffin-embedded tissues from patients of Hospital de S. José, Lisbon, distributed by tumor's grade. The results strongly suggest that the higher the tumour's grade is, the lower is the Rab25 expression. These results suggest a possible role of Rab25 as a tumor suppressor gene. In order to our studies can be statistically relevant, and taking to account the prevalence of IDC. We have determined a minimal sample size of 500, which will be recruited in collaboration with Hospital Beatriz Ângelo and Hospital da Luz. We will have access to formalin-fixed paraffin-embedded tissues and fresh tumour's sample from each patient.

These studies might be important to achieve important new biomarkers with predictive value.