Abstract for the proposal

Cancer arises as consequence of mutations that occur in genes, which control the ability of cells to divide. Typically these mutations render normal cells capable of multiplying indefinitely, as well as spreading throughout the human body. The proficiency with which tumors expand is strongly influenced by interactions between cancer cells and normal host cells found within their environment, which may include blood and immune cells, as well as connective tissue cells. The later are referred to as fibroblasts and help generate the structural framework onto which organs are assembled. Fibroblasts are also well known to play an important role in repairing damaged tissues following injury. As a model to study these cells and their influence on cancer and wound healing processes we will focus on the fibroblasts, which are found beneath the lining of the intestinal tract, also known as the intestinal epithelium. In addition, we will investigate how a group of interacting proteins, known as the Hippo pathway, regulate the molecular signals emanating from gut fibroblasts. This innovative proposal is expected to uncover crucial molecules that control the normal regenerative capacity of gut epithelium and tumor growth. Consequently, these studies will provide clues to better treat diseases such as inflammatory bowel disease and colorectal cancer.