Tumour progression and escape are determined not only by the genotype of the tumour cells but also by their interactions with the tumour microenvironment, which affects the tumoural development. Intestinal microbiota and bacteria are important factors of this micro-environment in CRC.

The aim of our project is to investigate the evolution and composition of the microbiota associated with colon tumours according to pronostic markers, and to study the impact of these bacteria on tumour progression and escape, in order to develop new prognostic and therapeutic approaches. This project will comprise three sections, the first devoted to an analysis of the gut microbiota in the context of CRC and the other two focusing on the impact of clb+ E. coli on carcinogenesis.

- **Study of the intestinal microbiota in genetic susceptibility to CRC.**
  
  - Characterization of the microbiota in murine models at different stages of CRC
  - Study in human subjects of the bacterial colonization of early lesions and of adenocarcinomas stratified according to grade and genetic susceptibility.

- **The impact of clb+ E. coli on tumour progress**
  
  - Role of clb+ E. coli in cell mobility
  - Involvement of oxidative stress in the pro-carcinogenic effect of clb+E.coli
  - Involvement of autophagy pathway in colorectal cancer.
• The impact of clb+ E. coli on tumour escape

• Role of clb+ E. coli in the emergence of cancer chemotherapy resistance
• Modulation of the immune infiltrate of tumours by clb+ E. coli

Research thematics

Research axis 1: e. coli and intestinal inflammation
Research axis 2: e. coli and colorectal cancer
Research axis 3: diagnosis and therapeutic tools