The extracellular matrix (ECM) forms the structural scaffold of organs and tissues. It continuously provides essential physical and biochemical signals to cells. The objective of our project is to decipher the crosstalk between extracellular matrix and immune cells. In particular, we want to understand how the physical properties of the extracellular matrix (three-dimensional organization, rigidity, etc.) influence the migration of immune cells.

To this end, we are developing an interdisciplinary approach at the frontier of immunology, cell biology and biophysics, centered on imaging approaches allowing to describe phenomena at the tissue scale, to study their mechanisms *in vitro* and test their potential therapeutic applications *in vivo*.

**Project 1: Impact of Macrophages on the properties of the tumor extracellular matrix and the immune infiltrate**

The extracellular matrix is deeply remodeled in many pathologies, and in particular during tumorigenesis. The objective of this project is to identify the role of macrophages in this process and to understand the consequences for the anti-tumor immune response. We hope that our results will improve immunotherapy treatment strategies.

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Project 2: Effects of inflammation on the extracellular matrix of the skin and consequences on immune patrolling.

In homeostasis, immune cells patrol the tissues in search of danger signals. How the extracellular matrix guides their migration and their control function is not clearly established, and in particular, how the extracellular matrix is modified by inflammation, from its initiation to its resolution. The results of this project may have clinical implications for acute and chronic inflammatory diseases, or the design of vaccines.

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