

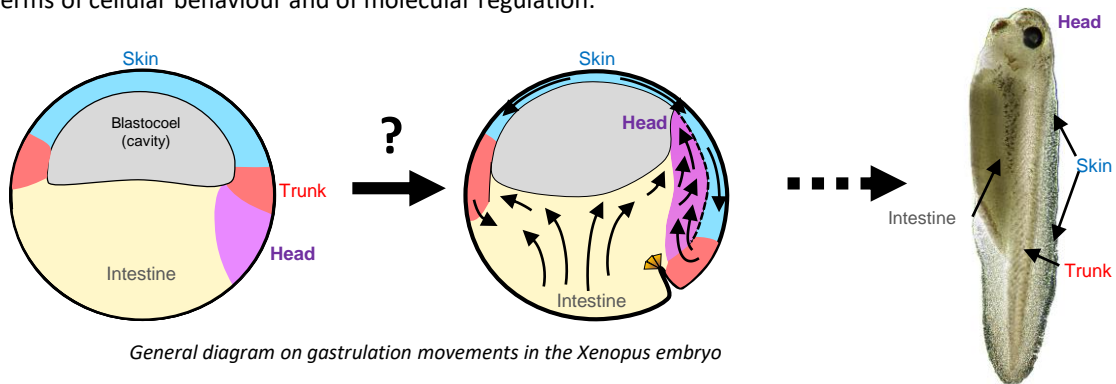
Master 2 internship 2023-2024 in Cell Developmental Biology: Regulation of collective migration during vertebrate gastrulation

Fagotto team, Cell adhesion and migration <https://www.crbm.cnrs.fr/francois-fagotto/?lang=en>

We are looking for an outstanding, highly motivated, science-driven student with strong background in Cell Biology to contribute to our research on the regulation of cytoskeleton dynamics and cadherin cell-cell adhesion in the highly migratory tissues of the gastrula embryo.

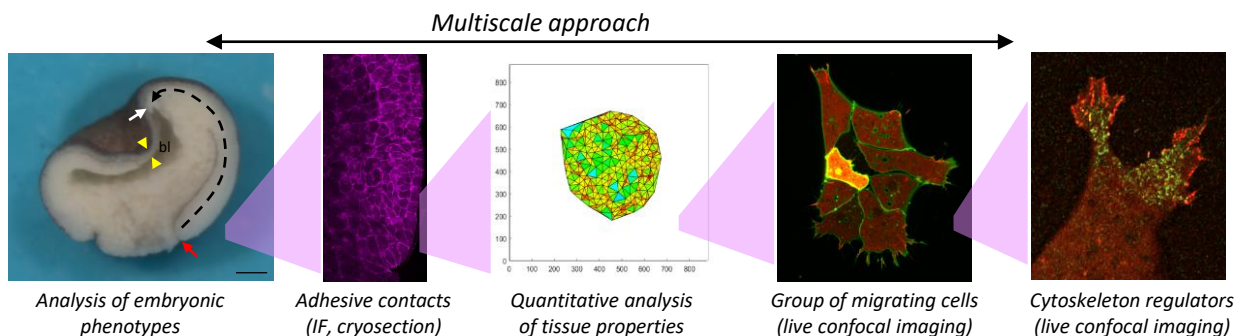
Background

Embryonic development involves large scale tissue remodelling in order to build the various body structures. One of the major event is gastrulation. During this process, the mesoderm tissue moves collectively to invade the inside of the embryo (purple and red in the diagrams below) to produce the head-trunk organisation of the future animal (here an amphibian, but the same process also takes place all animals, incl. humans). These movements are driven by the specific adhesive and migratory properties of the individual cells, which in turn appear to be controlled through the regulation of the actin cytoskeleton. Of note, mesoderm collective migration bears striking similarities with the process of cancer invasion, both in terms of cellular behaviour and of molecular regulation.



Experimental approach

The Xenopus embryo is a unique model that easily allows direct molecular manipulations through microinjection, as well as in vitro analysis through microdissection of tissue explants (“gastruloids”) and of isolated cells (these techniques can all be learnt during a Master internship). We exploit this system to perform a multidisciplinary/multiscale analysis, in particular through high resolution imaging of fixed and live samples, as well as biophysical measurements.



Applicant requirements

- Top academic record
- Strong background in Cell Biology
- Knowledge in Developmental Biology is a plus but not an absolute requirement
- Potential interest in pursuing academic research (PhD thesis)

Application should be sent to: francois.fagotto@crbm.cnrs.fr