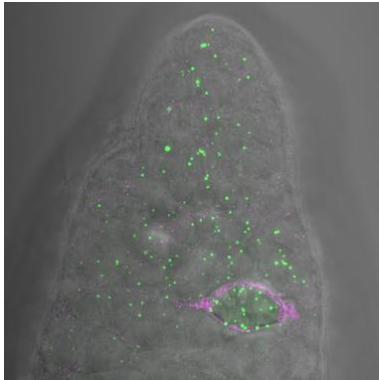


Understanding the role of lipids during programmed necrosis



Mollereau Group

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<http://www.ens-lyon.fr/LBMC/equipes/ApoDroso>

Apical tip of a Drosophila teste stained with Bodipy (green) and activated caspase Dcp-1 (purple).

We are looking for a talented post-doc to join our group to work on the role of lipids in programmed necrosis in *Drosophila* germ cells and cancer cells. Our group currently has 9 members including one professor, one associate professor, two post doctoral researchers, 3 PhD students and one senior technician. The salary of selected candidate will be supported by a grant from the Institut National du Cancer (INCA) starting at the beginning of 2024.

Our research group « Regulated Cell Death and Genetics of Neurodegeneration” is part of the Laboratory of Biology and Modeling of the Cell (LBMC), an interdisciplinary laboratory gathering 15 research groups. The LBMC is one of the four biology laboratories at ENS of Lyon, which is a top ranked French university. Our group is part of an active fly community, which includes 6 other fly groups at LBMC and the neighbour institute IGFL. We are organizing regular local, national and international meetings to discuss, share data and genetic tools. On October 20-23, 2023, we organized the European Drosophila Research Conference in Lyon which is gathering more than 900 participants.

One of the main goal of our laboratory is the understanding of regulated cell death mechanisms in development and pathological conditions, such as neurodegeneration or cancer. In the last few years, we became interested in the homeostasis of lipid droplets during regulated cell death. To achieve this goal, we are using fly spermatogenesis during which germ cells undergo physiological programmed necrosis (Napoletano et al. 2017). During this process, we are deciphering the importance of lipid droplet accumulation in the execution of programmed necrosis. In parallel, we are realizing experiments in cancer cells in which we investigate the process of lipid droplet accumulation and its consequence on cancer cell death. The goal of our study is the characterize the molecular determinants by which lipid droplet regulate specific form of cell death.

Recruitment criteria: Previous experience with fly genetics, expertise and background on cell death mechanisms and lipid metabolism will be taken into account.

To apply please send your CV including contact informations of previous supervisor and letter of interest of this position to [bertrand.mollereau\(at\)ens-lyon.fr](mailto:bertrand.mollereau(at)ens-lyon.fr) until December 15th 2023.

References from our lab significant for the project:

-Girard V, Jollivet F, Knittelfelder O, Celle M, Arsac JN, Chatelain G, Van den Brink D, Baron T, Shevchenko A, Kühnlein RP, Davoust N, Mollereau B. A non-canonical lipid droplet metabolism regulates the conversion of alpha-Synuclein to proteolytic resistant forms in neurons of a Drosophila model of Parkinson disease. PLOS Genetics 2021, 17(11)

-Van Den Brink DM, Cubizolle A, Chatelain G, Davoust N, Girard V, Johansen S, Napoletano F, Dourlen P, Guillou L, Angebault-Prouteau C, Bernoud-Hubac N, Guichardant M, Brabet P, Mollereau B. Physiological and pathological roles of FATP-mediated lipid droplets in Drosophila and mice retina. PLoS Genet 2018, 14(9):

-Napoletano F, Gibert B, Vincent S, Favrot C, Mehlen P, Girard V, Teil M, Chatelain G, Walter L, Arama E, Mollereau B. p53-dependent programmed necrosis controls germ cell homeostasis during spermatogenesis. PLOS Genetics. 2017, Sept 25, 13(9), 1-21.