



PhD Position - 3 years - Starting October 2020

at the Institut de Biologie Valrose (iBV), Nice
Université Côte d'Azur

Deciphering the regulation of the cell death receptor Fas by cell polarity molecules & adherens junctions in both tumoral and normal human epithelia

Key words: Receptor, Signaling, Cancer, Cell polarity, Cell-Cell junctions

The PhD student will integrate the research group “death receptors signaling in cancer therapy” (iBV, <http://ibv.unice.fr/research-team/hueber>), at the Institute of Biology Valrose affiliated to the CNRS, Inserm and University Côte d'Azur (UCA).

Project proposal: Our team is investigating the functions of the cell death receptor Fas/CD95/TNFRSF6, a member of the TNFR superfamily. Fas is considered as a tumor suppressor thanks to its ability to eliminate cancer cells by engaging programmed cell death by apoptosis. However, Fas activation by its ligand (FasL) could also promote tumor development and immune disorders (1). Our group is studying the molecular mechanisms that control the Fas versatile signaling outcome in the context of both normal and cancer cells (2, 3). Our recent data show that formation of adherens junction, a cell-cell adhesion complex, and association with the Dlg1 polarity complex prevent the pro-apoptotic signaling of Fas (4, 5). This new Fas-regulatory mechanism is crucial to protect normal epithelial cells from apoptotic signals and to sense and eliminate abnormal cells from epithelial tissues to prevent pathological outcome such as cancer and chronic inflammatory diseases. The PhD student will pursue this project and decipher the regulation of Fas cell death and non-death signaling by the Cadherin-Dlg1 polarity complex notably by studying Fas receptor signaling/trafficking on both primary and tumoral epithelial human cells by using various cell biology approaches.

Bibliography of the team link to the project: **1-** Rossin et al (2019) **Cancers**, 8;11(5):639. **2-** NL t al (2018) **Sci Rep**, 20;8(1):12424. **3-** Chakrabandhu K (2016), **PLoS Biol**, 4;14(3). **4-** Gagnoux-Palacios, L.; et al (2018) **Journal of Cell Biology**, 217, 3839-3852. **5-** Gagnoux-Palacios L., Hueber AO (2019) **Medecine/Sciences**. 35(11):830-833.

Technical approaches: Human cell culture; cell death assays; receptor trafficking studies (cell surface labeling, endocytosis assay), protein expression quantification/localization (FACS, IP, IF, IB, ELISA, proteomic); microscopy techniques (confocal imaging, time-lapse).

Candidate profil: We are looking for a highly motivated student, independent and creative, with a Master's Degree in Cellular, Cancer or Molecular Biology. Prior experience with cell culture and classical cellular and biochemical approaches will be appreciated.

HOW TO APPLY: Interested and motivated students should send as soon as possible a CV, a motivation letter, master scores/ranking and reference letters to both L. GAGNOUX (gagnoux@unice.fr) and A-O HUEBER (hueber@unice.fr).