

Master or PhD project

<p>Unité INSERM : U1279, Dynamique des cellules tumorales</p> <p>Intitulé Equipe : Organelle network</p> <p>https://www.gustaveroussy.fr/en/umr-1279</p> <p>https://www.linkedin.com/in/kristine-schauer/</p> <p>ED d'appartenance: CBMS, Université Paris Saclay</p> <p>Responsable de l'Equipe : Kristine Schauer</p>	<p>Responsable du Stage : Kristine Schauer (CRCN CNRS, HDR)</p> <p>Contacts</p> <p>Adresse : Institut Gustave Roussy, B2M 114 rue Edouard Vaillant 94805, Villejuif, France</p> <p>Email : kristine.SCHAUER@gustaveroussy.fr</p> <p>Tel : 01 42 11 41 29</p>
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Titre du projet : Optimizing delivery of antibody-drug conjugates for personalized cancer therapy

Résumé du Projet de Stage :

Targeted delivery of anticancer drugs are an emerging strategy of personalized medicine in the fight against cancer. A type of drugs based on antibody drug-conjugates (ADC) require trafficking and cleavage in the acidic, protease containing lysosomal organelle of cells for action. The Master/PhD project will characterize the intracellular trafficking pathways of a specific ADC targeting a calcium signal transducer receptor. Particularly, the student will target selected molecular players of the "recycling" or "retrograde" pathways that re-route ADC from the lysosome to alternative cellular compartment. Additionally, we aim at identifying molecules that increase lysosomal trafficking. Lastly, lysosomal cleavage will be compared to proteasomal degradation pathways. The student will learn and employ advanced quantitative imaging technologies, bioengineering cell culture techniques (micropatterning) and dynamic delivery assays. Our work is relevant to understand in detail ADC trafficking in order to optimize selective drug delivery to cancer cells, a major interest of the Institut Gustave Roussy where the lab is located. The project, which can be extended for a PhD, will contribute to the development of novel personalized medicine approaches within a framework of a scientific-medical project.

Profils recherchés : medical or pharmacy student

Compétences recherchées : High self motivation, curiosity, ability to work in a team, knowledge of statistical analysis programs

Publications de l'équipe, relatives au projet de stage :

- Grossier JP, Xouri G, Goud B, **Schauer K**. Cell adhesion defines the topology of endocytosis and signaling. *The EMBO Journal*, 2014 Jan 1;33(1):35-45.
- Chen PI, **Schauer K**, Kong C, Harding AR, Goud B, Stahl PD. Rab5 isoforms orchestrate a "division of labor" in the endocytic network; Rab5C modulates Rac-mediated cell motility. *PLoS One*. 2014 Feb 28;9(2):e90384.
- Capmany A, Yoshimura A, Kerdous R, Caorsi V, Lescure A, Del Nery E, Coudrier E, Goud B, **Schauer K**. MYO1C stabilizes actin and facilitates the arrival of transport carriers at the Golgi complex. *Journal of Cell Science*. 2019 Apr 26;132(8).
- Lachuer H, Mathur P, Bleakley K, **Schauer K**. Quantifying Spatiotemporal Parameters of Cellular Exocytosis in Micropatterned Cells. *J Vis Exp*. 2020 Sep 16;(163).
- Colin F, **Schauer K**, Hamiche A, Martineau P, Borg JP, Bednar J, Bertolin G, Camoin L, Collette Y, Dimitrov S, Fournier I, Hyenne V, Mendoza-Parra MA, Morelli X, Rondé P, Sumara I, Tramier M, Schultz P, Goetz JG. The NANOTUMOR consortium - Towards the Tumor Cell Atlas. *Biol Cell*. 2021 Jun;113(6):272-280. Review.