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Centre de Recherche en Biologie Cellulaire de Montpellier



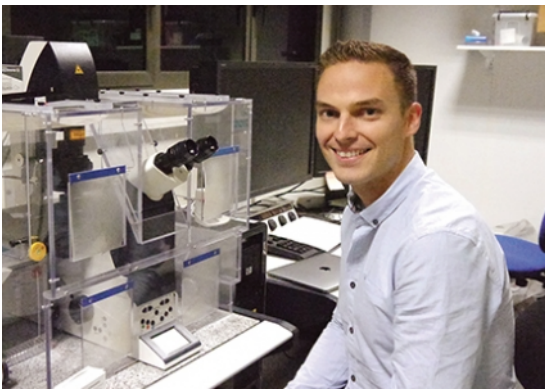
## *CRBM external seminar*

*Thursday Sept 29<sup>th</sup> 11:00 am Salle Marcel Dorée*

# **Un(MaSC)ing new mechanisms by which the primary cilium controls stemness**

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### Abstract

Tissue development and regeneration after damage rely on stem cells that possess the ability to self-renew and produce differentiating progeny. In an analogous manner, the development of carcinomas and their resistance to therapy depend on a small subset of tumor cells, called cancer stem cells, with SC-like properties. We will discuss together our recent findings on the mechanisms by which epithelial plasticity programs, known as Epithelial-Mesenchymal Transition (EMT) programs, induce primary ciliogenesis in mammary stem cells and breast cancer stem cells to regulate mammaryogenesis and claudin-low breast tumorigenesis.

### Selected publications:

Wilson MW, Callens C, Le Gallo M, Mironov S, Ding Q, Salamagnon A, Chavarria TE, Viel R, Peasah AD, Bhutkar A, Martin S, Godey F, Tas P, Kang HS, Juin PP, Jetten AM, Visvader JE, Weinberg RA, Attanasio M, Prigent C, Lees JA, Guen VJ. An EMT-primary cilium-GLIS2 signaling axis regulates mammaryogenesis and claudin-low breast tumorigenesis. *Science Advances*. 2021 Oct 29;7(44):eabf6063. doi:10.1126/sciadv.abf6063.

Guen VJ, Prigent C. Targeting Primary Ciliogenesis with Small-Molecule Inhibitors. *Cell Chem Biol*. 2020 Oct 15;27(10):1224-1228. doi: 10.1016/j.chembiol.2020.07.018.

Wilson MM, Weinberg RA, Lees JA, Guen VJ. Emerging Mechanisms by which EMT Programs Control Stemness. *Trends Cancer*. 2020 Sep;6(9):775-780. doi:10.1016/j.trecan.2020.03.011.

Guen VJ, Chavarria TE, Kröger C, Ye X, Weinberg RA, Lees JA. EMT programs promote basal mammary stem cell and tumor-initiating cell stemness by inducing primary ciliogenesis and Hedgehog signaling. *Proc Natl Acad Sci U S A*. 2017 Dec 5;114(49):E10532-E10539. doi:10.1073/pnas.1711534114