

Séminaire DBSCI

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11 h

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Synthetic design of membrane organizers to reconstitute cortical polarity

Polarized cells rely on a polarized cytoskeleton for polarized trafficking, spindle orientation and oriented migration. But while cytoskeleton remodeling machineries have been extensively characterized at the molecular level, how polarity signalling at the cell cortex translates to cytoskeleton remodeling in the cytosol remains elusive. This is predominantly due to there being no amenable system to induce long term cortical polarity of specific signaling pathways in the absence of intrinsic polarity. Here, we developed a synthetic biology approach to reconstitute spontaneous symmetry breaking of the cell cortex in order to restore cortical polarity of any protein of interest within a population of naïve, unpolarized cells during division. The assay relies on a novel two-component 2D protein polymer, which has been specifically designed to cluster any transmembrane protein of interest into a polar cap, while blocking its endocytosis. I will discuss how this novel technology can be used to reconstitute key features of asymmetric cell division in unpolarized cells.

Ce séminaire aura lieu uniquement par visioconférence :

<https://cnrs.zoom.us/j/94561346311>

ID de réunion : 945 6134 6311 - Code : wcFF9f