

Séminaire de Biologie des Plantes

Les séminaires ont lieu sur le Campus Montpellier SupAgro/INRA de La Gaillarde (2, place P. Viala Montpellier)

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Jeudi 14 octobre 2010

Amphi 208 (Cœur d'Ecole) à 14h

John Runions and Alexandre Martiniere

(Senior Lecturer in Cell Biology, Oxford Brookes University)

Bioimaging techniques used in the study of plant membrane protein dynamics

We use a variety of different approaches for studying membrane proteins. In this talk, we present the technology that enables us to study membrane protein associations and dynamics. The majority of these techniques employ fluorescent proteins for studying protein function in living cells. The plant cell secretory pathway compartments that we study include endoplasmic reticulum, Golgi apparatus, and the plasma membrane. Our most commonly used approach is to bleach (FRAP) or photoactivate fluorescent proteins that are fused to the membrane proteins under study. Other techniques currently being used in our lab include FRET/FLIM, TIRF, and laser tweezers. We will present results from several recent studies. In particular, we will describe the discovery of a bridge formed between the plasma membrane and the cell wall by the cytoskeletal nucleating protein FORMIN 1. Other research highlights include altered dynamics of the aquaporin PIP2;1 under conditions of increased salt stress; the discovery that FAD2 acts as a temperature sensor; and our finding that PIN2 localisation seems to be affected by the sterol composition of the plasma membrane. The confocal microscopy techniques that we employ, therefore, lend themselves to many types of research including cytoskeleton interactions in cells signalling, circadian dynamics of membrane composition, and hormone receptor function.

Contact :

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Séminaires à venir :

Jeudi 28 octobre : Francis André Wollman (contact jean-francois.briat@supagro.inra.fr)

Jeudo 4 novembre : Pascal Genschik (contact frederic.gaymard@supagro.inra.fr)