

I2BC

Pr sentation du laboratoire

Nom du Laboratoire	Institut de Biologie Int�grative de la Cellule
Acronyme	I2BC
Adresse	1 avenue de la Terrasse
Site web	https://www.i2bc.paris-saclay.fr
Tutelles	CNRS/CEA/Universit� Paris Saclay
Graduate School(s) de rattachement	LSH, EOBE
Autres OI d'int�r�t	Bioprobe, Living Machines at Work
Directeur du laboratoire	Fr�d�ric Boccard
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Personne contact du laboratoire pour PSiNano

Nom	Pr�nom	Fonction	Email	T�l�phone
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Pr sentation des  quipes de recherche

 quipe 1

Nom de l'�quipe	Dynamique du cytosquelette et motilit�
Site Web de l'�quipe	https://www.i2bc.paris-saclay.fr/equipe-cytoskeleton-dynamics-and-motility/
Nombre de personnels	3 permanents

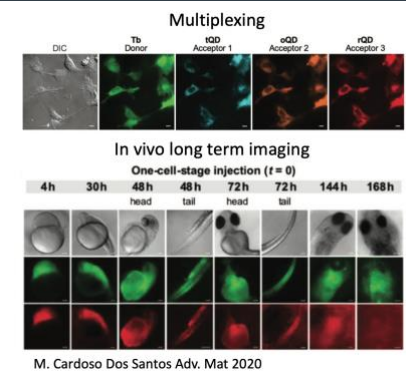
Liste des permanents de l' quipe

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Activit s de recherche en lien avec les nanos

Nanosensors for protein assembly and mechanosensing Long-lived and non-toxic nanoprobos for live cell or in vivo imaging

We are developing **nanosensing** approaches to understand cell adhesion and migration. In order to reproduce these functions of a cell from molecular components we implement **Biomimetic Systems** such as **Artificial Cells**. Artificial cells are reconstituted *in vitro* with giant lipid vesicles (GUVs), carrying adhesion receptors (integrins) and confining biomolecules involved in migration (actin, myosin) or adhesion (talin, kindlin etc.). These are introduced by microinjection. Biomolecular self-assembly is monitored using FRET (F rster Resonance Energy Transfer) Quantum Dots based nanosensors. These FRET sensors make possible observation of the macro-molecular assembly of up to 5 biomolecules simultaneously by multiplexed imaging. Moreover, our nanoprobos allow to quantify the interactions between assembling biomolecules in terms of conformations and distances (up to 20 nm, instead of 10 nm using conventional biosensors based on fluorescent proteins).



M. Cardoso Dos Santos Adv. Mat 2020

Collaborations sur le plateau de Saclay

Laboratoire	UPS/IPP/Ind	Th�me de la collaboration
BIOSYS	C2N	Synthetic cell: Setting up of adhesion

Principales Collaborations nationales

Laboratoire	Institution	Pays	Th�me de la collaboration
L2n	UTT	France	Quantum-Dots based sensors for Force NanoBioImaging
Cobra	Universit� de Rouen Normandie	France	Enhanced intracellular nanosensors
Laboratoire de Bioimagerie et Pathologie	Universit� de Strasbourg	France	Biosensors for protein assembly and mechanosensing

Principales Collaborations Internationales

Laboratoire	Institution	Pays	Th�me de la collaboration
Center for Bio/Molecular Science and Engineering	Naval Research Laboratory	USA	QD based sensing