



Programme du 8^{ème} meeting annuel du réseau EFOR

2 et 3 Mai 2017

Journée du 2 Mai : New genome editing technologies: applications and ethical considerations – organized by Jean-Stéphane JOLY

Session : Genome editing in plants : what's new for the world ?

CRISPR-Cas9 : Promises and limitations for its use in agriculture - *Introduction by Peter ROGOWSKY (ENS Lyon)*

Genome editing in plant agriculture – *Dan VOYTAS (Univ. Of Minnesota, USA)*

Genome editing in monocots : achievements and challenges – *Paul CHRISTOU (Univ. Of Lleida, Spain)*

Session : Genome editing in animals : how and for which applications ?

CRISPR strategies to generate precise animal models of specific rare disease patients mutations – *Lluis MONTOLIU (CNB-CSIC, Spain)*

Translating Gene Editing to Human and Animal welfare – *Scott FAHRENKRUG (Recombinetics, USA)*

Session : Genome editing, ethical questions

Introduction – *Pascal NOUVEL (Univ. François Rabelais)*

Just editing ? On the ethical and social aspects of gene editing in the context of animal use – *Franck L.B. MEIJBOOM (Univ. Utrecht, Netherlands)*



Journée du 3 Mai : Model species workshops

[Zebrafish workshop](#) – organized by Frédéric SOHM and Laurent LEGENDRE

Functional studies in Zebrafish

Nerves and hydrogen peroxide : how old enemies become new friends – Francesca MEDA (CIRB, Paris)

Delta/Notch signaling is essential for the establishment of apico-basal polarity in the zebrafish spinal cord – Maximilian FÜRTHAUER (iBV, Nice)

Dynactin1 in ALS : from axonal transport to synaptic stability – Filippo DEL BENE (Institut Curie, Paris)

Bcl-2 family proteins in zebrafish, from developmental biology to breast cancer therapy – Germain GILLET (CRCL, Lyon)

Zebrafish as a model to study the function of renal ciliopathy-associated genes – Sophie SAUNIER (IMAGINE, Paris)

Functional interactions between newborn and functionnaly mature neurons leading to integration into established neuronal circuits – German SUMBRE (ENS Paris)

Technological session

Guide RNA design for genome editing experiments – Jean-Paul CONCORDET (TACGENE, Paris)

Swimming from morpholino knockdowns to genome editing technologies in zebrafish – Fabien CHEVALIER & Marilyne MALBOUYRES (IGFL, ENS Lyon)

A rapid and simple procedure for the screening of genome edition events – Constantin YANICOSTAS (PTMM, Paris)

Young teams

Live tracking of exosome communication *in vivo* – Guillaume VAN NIEL (Institut Curie, Paris)

Cell migrations driving mesendoderm formation in zebrafish – Nicolas DAVID (Ecole Polytechnique Palaiseau)



[Non-human primates workshop](#) – organized by Romain LACOSTE and Pierre SAVATIER

Assisted reproduction techniques

In vitro spermatogenesis – Marie-Hélène PERRARD-DURAND (Stem Cell and Brain Research Institute, Lyon)

ART in the marmoset monkey – Charis DRUMMER (German Primate Center, Germany)

ART in the rhesus monkey – Irène ARKOY-MARCY (Stem Cell and Brain Research Institute, Lyon)

Stem cells and genome editing

Generation of transgenic marmosets and breeding by natural mating : biological and technical implications – Rüdiger BEHR (German Primate Center, Germany)

NHP-iPS cell differentiation and assessment of their ability to support hematopoietic cell engraftment in preclinical studies – Leïla MAOUCHÉ-CHRÉTIEN (IMETI, Fontenay-aux-Roses)

A transcriptome study of the rhesus macaque pre-implantation embryo by single cell RNA sequencing – Irène AKSOY-MARCY (Stem Cell and Brain Research Institute, Lyon)

Human embryos manufactured for research – Hilde VEN DE VELDE (EMGE, Belgium)



[Algae workshop](#) – organized by *Angela FALCIATORE, Catherine LEBLANC, Simon DITTAMI and Andrés RITTER*

Genomics & Epigenetics

The *Ectocarpus* genome seven years on : improved gene annotation with isoforms, non coding genes and more – *Marc COCK* (Station Biologique de Roscoff)

The emerging function of Polycomb repressive complex in diatoms – *Leïla TIRICHINE DELACOUR* (*iBENS*)

PIRATE : a pipeline to retrieve and annotate transposable elements in *Tisochrysis lutea* genome – *Jérémie BERTHELIER* (*IFREMER*)

The transcriptomic landscape of the *Chlamydomonas* chloroplast – *Marina CAVAIUOLO* (*IBPC*)

A low-CO₂-inducible protein in the diatom *Thalassiosira pseudonana* – *Erik JENSEN* (Aix Marseille Univ)

Molecular identification and function of MDA1 in the chloroplast of *Chlamydomonas* – *Stephanie VIOLA* (*IBPC*)

Genomic, evolution and adaptation

The evolution and significance of diverged alleles in diatoms – *Thomas MOCK* (UEA Norwich, UK)

The sea lettuce (*Ulva*) genome : insights in the biology of bloom-forming green seaweed – *Olivier DE CLERCK* (Ghent Univ, Belgium)

QTL mapping in the model brown alga *Ectocarpus* – *Komlan AVIA* (Station Biologique de Roscoff)

The genome of *Lobosphaera incisa* tells the secrets of a small green coccoid – *Olivier VALLON* (*IPBC*)

Genomic and metabolic engineering

Advances in editing microalgae genome – *Fayza DABOUSSI* (*INSA*)

Using *Chlamydomonas reinhardtii* as an experimental vehicle to understand the driver in photosynthetic yields – *Xenie JOHNSON* (CEA Cadarache)

Patchwork evolution of metabolic pathways in red and brown macroalgae – *Gabriel MARKOV* (Station Biologique de Roscoff)

Transcription factors involved in the phenotype of a domesticated oleaginous microalgae strain of *Tisochrysis lutea* – *Stanislas THIRET-RUPERT* (*IFREMER*)



[Xenopus workshop](#) – organized by Pierre CHARNET, Christophe HELIGON and Christophe MOREAU

Animal testing regulations – Christophe JOUBERT (CEA)

Xenopus oocytes : home-made hardware for their injection, perfusion, light-stimulation, etc.
– Jean-Baptiste THIBAUD (IBMM Montpellier)

Patch clamp and TEVC data treatment – Christophe MOREAU (*Institut de Biologie Structurale, Grenoble*)

Xenopus oocytes preparation - Christophe HÉLIGON (CRB Xenopes, Rennes)

RESAMA network : visit results in a health-monitoring assessment of the facility – Brigitte GUILLET (CRB Xenopes, Rennes) & Emmanuel MEUNIER (Vetofish, Chateauneuf-les-Martigues)

Cut open oocyte – Mohamed CHANINE (*Institut universitaire en santé mentale de Québec, Canada*)

Calcium channels in Xenopus oocytes : expression, biophysics and regulation – Matthieu ROUSSET (IBMM, Montpellier)

Microtransplantation of membrane from cerebral and adrenal tissues to Xenopus oocytes : an alternative way for electrophysiological investigation of native ligand-gated ion channels
– Christian LEGROS (UMR CNRS 6214 – Inserm U1024, Angers)

Voltage clamp fluorimetry for studying movements in ion channels – Laëtitia MONY (ENS Paris)

Round table : scientific community needs towards the CRB Xenopes



[Marine metazoa workshop](#) – organized by Agnès BOUTET, Emmanuelle RENARD, Eve GAZAVE and Hector ESCRIVA

Using functional genetic tools to dissect neurohormonal regulation in the marine bristle worm, *Platynereis dumerilii* – Florian RAIBLE (Max F. Perutz Lab, Austria)

***Clytia medusa* : a promising model for regeneration studies – Lucas LUCLÈRE (UPMC, Paris)**

A solution to the Conundrum of Non-bilaterian relationships ? – Gert WÖRHEIDE (LMU, Germany)

Molecular and omics approaches to development and evolution : the sea urchin embryo as a model system for regulatory biology – Maria INA ARNONE (Stazione Zoologica Anton Dohrn, Italy)

Involvement of Wnt and BMP signaling pathways during apical plate patterning in the hemichordate *Ptychodera flava* – Yann LE PÉTILLION (Station Biologique Banyuls)

The chordate *Oikopleura dioica* : how a successful loser becomes an attractive evolutionary-knockout model in EcoEvoDevo – Cañestro CRISTIAN (Univ. Barcelona, Spain)

Evo-devo of tooth replacement : a critical evaluation of the stem cell hypothesis – Ann HUYSEUNE (Ghent Univ., Belgium)

Better than zebrafish ? Marine teleost models from aquaculture for skeletal research – Eckhard WITTEN (Ghent Univ., Belgium)

The fine control of protein synthesis in kidney regeneration : lessons from marine organisms – Agnès BOUTET (Station Biologique Roscoff)



[Plant models workshop](#) – organized by Cécile COLLONNIER, Emmanuel GUIDERDONI, Fabien NOGUÉ and Christophe PÉRIN

Plant species and traits

CRISPR-Cas9 in models : moss, *Arabidopsis* and *Brachypodium* – Kostlend MARA (IJPB Versailles), Anthony GOBERT (IPMB Strasbourg) & Oumaya BOUCHABKE (IJPB Versailles)

CRISPR-Cas9 in dicots/trees : Tomato and Camelina – Marianne MAZIER (INRA Avignon), Michel HERNOULD (INRA Bordeaux) & Jean-Denis FAURE (IJPB Versailles)

CRISPR-Cas9 in monocots/cereals : Rice, Wheat and Maize – Emmanuel GUIDERDONI (CIRAD Montpellier), Pierre BARRET (INRA Clermont-Ferrand) & Ghislaine GENDROT (ENS Lyon)

Methodology : progresses and prospects

sgRNA definition (databases) and multiplexing, Cas9 expression strategies, alternative nucleases, dCas9 fusions – Emmanuel GUIDERDONI (CIRAD Montpellier)

Knock-in : homologous recombination for nucleotide to large sequence replacement – Cécile COLLONNIER (IJPB Versailles)

Transfection and regeneration methods. Non integrative edition in plant cells – Pierre HILSON (IJPB Versailles)