

KEYSTONE SYMPOSIA on Molecular and Cellular Biology

MicroRNAs and Human Disease (J6)

Scientific Organizers: Eric N. Olson, Sakari Kauppinen and Eva van Rooij

Sponsored by Alnylam Pharmaceuticals, Inc. and Regulus Therapeutics Inc.

MicroRNAs and Non-Coding RNAs and Cancer (J5)

Scientific Organizers: Gregory J. Hannon, Curtis C. Harris and Martine F. Roussel

February 11-16, 2011 • Fairmont Banff Springs • Banff, Alberta • Canada

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Abstract & Scholarship Deadline: October 12, 2010 / Late-Breaking Abstract Deadline: November 16, 2010 / Early Registration Deadline: December 10, 2010

FRIDAY, FEBRUARY 11

Welcome and Keynote Session (Joint)

***Eric N. Olson**, University of Texas Southwestern Medical Center at Dallas, USA

Victor R. Ambros, University of Massachusetts, USA
MicroRNA Pathways in C. elegans

***Gregory J. Hannon**, Cold Spring Harbor Laboratory, USA

Scott W. Lowe, Cold Spring Harbor Laboratory, USA
Constructing and Deconstructing Cancer Using Mouse Models and RNA Interference

SATURDAY, FEBRUARY 12

MicroRNA Mechanisms (Joint)

***Nikolaus Rajewsky**, Max Delbrück Center for Molecular Medicine, Germany

Phillip D. Zamore, University of Massachusetts Medical School, USA
Germline and Somatic Small RNAs

Elisa Izaurralde, Max Planck Institute for Developmental Biology, Germany
GW182 Proteins Interact with PABPC1 to Promote Silencing of miRNA Targets

Gunter Meister, Max Planck Institute for Biochemistry, Germany
Argonaute Function in Glioblastoma

John L. Rinn, Harvard University, USA
Large Intergenic Non-Coding RNAs: From Discovery to Mechanism

Aaron J. Arvey, Memorial Sloan Kettering Cancer Center, USA
Short Talk: Target mRNA Abundance Dilutes MicroRNA and siRNA Activity

Steven G. Chaulk, University of Alberta, Canada
Short Talk: pri-miRNA Tertiary Structure Modulation of miRNA Biogenesis

MicroRNA Targets and Polymorphisms (Joint)

***Phillip A. Sharp**, Massachusetts Institute of Technology, USA

Nikolaus Rajewsky, Max Delbrück Center for Molecular Medicine, Germany
Post-Transcriptional Gene Regulation by small RNAs and RNA Binding Proteins

Robert B. Darnell, HHMI/Rockefeller University, USA
Decoding protein-RNA regulation with HITS-CLIP maps

Karen P. Steel, Wellcome Trust Sanger Institute, UK
The Role of miRNA Mutations in a Mendelian Form of Deafness

Danilo Allegra, University Hospital of Ulm, Germany
Short Talk: A Drosha Processing Defect Contributes to Down-Regulation of miR-15a/-16 in a Subset of CLL Patients

Pieter Mestdagh, Ghent University Hospital, Belgium
Short Talk: The miR-17-92 MicroRNA Cluster Regulates Multiple Components of the TGF- β Pathway in Neuroblastoma

SUNDAY, FEBRUARY 13

MicroRNAs as Oncogenes and Tumor Suppressors I (J5)

Phillip A. Sharp, Massachusetts Institute of Technology, USA
MicroRNA Activity and Cancer

Mark E. Hatley, University of Texas Southwestern Medical Center, USA

Modulation of K-ras-Dependent Lung Tumorigenesis by microRNA-21

***Martine F. Roussel**, St. Jude Children's Research Hospital, USA
MicroRNAs during Cerebellum Development and in Pediatric Medulloblastoma

Varda Rotter, Weizmann Institute of Science, Israel
p53-Repressed miRNAs are involved with E2F in a feed-forward loop promoting proliferation.

Jean-Christophe W. Marine, Vlaams Interuniversitair Instituut, Katholieke Universiteit Leuven, Belgium
Short Talk: Dicer1 is a Synthetic Lethal Partner of Tumor Suppressor p53 and is Required for Retinoblastoma Formation

Kalpna Ghoshal, Ohio State University, USA
Short Talk: Loss of microRNA-122 Affects Lipid Metabolism and Promotes Hepatocarcinogenesis in Mice

MicroRNAs in Muscle Development and Disease (J6)

***Eva van Rooij**, miRagen Therapeutics, USA

Eric N. Olson, University of Texas Southwestern Medical Center at Dallas, USA
MicroRNA Control of Cardiovascular Development and Disease

Gerald W. Dorn, Washington University School of Medicine, USA
Genetic Variation and microRNA Targeting of Cardiac mRNAs

Thomas Thum, Medical School Hannover, Germany
MicroRNAs as Therapeutic Targets during Cardiac Remodeling

Da-Zhi Wang, Children's Hospital Boston, USA
MicroRNA-1 and miR-206 Regulate Skeletal Muscle Satellite Cells

Frank J. Naya, Boston University, USA
Short Talk: MEF2A Regulation of a miRNA Mega-Cluster is Required for Proper Skeletal Muscle Regeneration

Kasey C. Vickers, National Institutes of Health, USA
Short Talk: High-Density Lipoproteins Transport and Delivery of MicroRNA: A Novel Intercellular Communication Pathway in Cardiovascular Disease

MicroRNAs as Oncogenes and Tumor Suppressors II (J5)

***Joshua T. Mendell**, Johns Hopkins University, USA
MicroRNA Reprogramming by Oncogenic and Tumor Suppressor Pathways

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Andrea Ventura, Memorial Sloan-Kettering Cancer Center, USA
MicroRNA Oncogenes

Carlo M. Croce, Ohio State University, USA
Causes and Consequences of microRNA Dysregulation in Cancer

MicroRNAs and Vascular Disease (J6)

***Deepak Srivastava**, Gladstone Institute of Cardiovascular Disease, USA

Stefanie Dimmeler, University of Frankfurt, Germany
Control of Angiogenesis by MicroRNA

Thomas Braun, Max Planck Institute for Heart and Lung Research, Germany
The Role of miRNAs and RNA Binding Proteins in Post-Transcriptional Regulation of the Cardiovascular System

Anne Yaël Nossent, Leiden University Medical Center, Netherlands
Short Talk: Insulin Receptor Substrate 1 is a Direct Target of MicroRNA-487b, which is Up-Regulated in the Aortic Wall under Chronic Angiotensin II Induced Hypertension in Rats

Greg M. LaMonte, Duke University, USA
Short Talk: Erythrocytic microRNA as Potential Genetic Determinants of Malaria Resistance in Sickle Cell Diseases

MONDAY, FEBRUARY 14

MicroRNAs in the Immune Response, Angiogenesis and Metastasis (J5)

***David Baltimore**, California Institute of Technology, USA
MicroRNAs in the Immune System

Sohail F. Tavazoie, Rockefeller University, USA
Regulation of Cancer Metastasis by Human microRNAs

Elsa R. Flores, University of Texas MD Anderson Cancer Center, USA
TAp63 Suppresses Metastasis through Coordinate Regulation of Dicer and miRNAs

Gemma E.M. Bridge, University College London Cancer Institute, UK
Short Talk: MicroRNA-Mediated Regulation of DLL4 Influences Endothelial Cell Behavior and Vascular Integrity during Developmental Angiogenesis

Desire Bonci, Istituto Superiore di Sanità, Italy
Short Talk: Control of Tumor and Microenvironment Crosstalk by miR-15a and miR-16 in Prostate Cancer

MicroRNAs in CNS Disorders (J6)

***Robert B. Darnell**, HHMI/Rockefeller University, USA

Gerhard Schratt, University of Heidelberg, Germany
Activity-Dependent Regulation of Neuronal microRNAs

Bart De Strooper, Center for Human Genetics, Belgium
miRNA Deregulation in the Pathogenesis of Alzheimer's Disease

Beverly L. Davidson, University of Iowa, USA
Noncoding RNAs and Huntington's Disease

Claes Wahlestedt, The Scripps Research Institute, USA
Natural Antisense Transcripts and microRNAs in Neuroscience

Angela Andereggi, Northwestern University, USA
Short Talk: The Role of MicroRNAs in Midbrain Dopaminergic Neurogenesis

Eva Maria Jimenez-Mateos, Royal College of Surgeons in Ireland, Ireland
Short Talk: MicroRNA Regulation in Hippocampus Following Status Epilepticus in Mice

MicroRNAs as Cancer Biomarkers (J5)

***Curtis C. Harris**, NCI, National Institutes of Health, USA
Inflammation and Cancer: Microenvironment, Cytokines, MicroRNA and p53

Frank J. Slack, Yale University, USA
MicroRNAs as Diagnostics and Therapeutics in Cancer

Xin Wei Wang, NCI, National Institutes of Health, USA
MicroRNA and Hepatocellular Carcinoma: Biology and Prognostic Significance

Jason D. Arroyo, Fred Hutchinson Cancer Research Center, USA
Short Talk: Circulating MicroRNAs Are Carried by Argonaute2 Complexes in Human Plasma

MicroRNAs in the Immune Response and Viral Infections (J6)

***Sakari Kauppinen**, Santaris Pharma A/S, Denmark

Peter Sarnow, Stanford University School of Medicine, USA
Modulation of Hepatitis C Virus and Insig1 RNA Abundances by MicroRNA 122

Stephane Heymans, Maastricht University, Netherlands
Inflammation-MicroRNAs Mediate Cardiac Failure

Bryan R. Cullen, Duke University Medical Center, USA
Viruses and MicroRNAs

Emma Kate Loveday, University of British Columbia, Canada
Short Talk: Strain Specific Modulation of the Host Cell MicroRNA-ome by High Pathogenic H5N1, H7N7, and Swine-Origin 2009 H1N1 Influenza A Viruses

Joseph Luna, Rockefeller University, USA
Short Talk: Argonaute HiTS-CLIP Defines a Dynamic miRNA:mRNA Interaction Map for Hepatitis C Virus Infection

TUESDAY, FEBRUARY 15

MicroRNAs and Stem Cells (Joint)

***Stefanie Dimmeler**, University of Frankfurt, Germany

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Gregory J. Hannon, Cold Spring Harbor Laboratory, USA
MicroRNAs in Mammary Epithelial Stem/Progenitors and Tumor-Initiating Cells

Scott M. Hammond, University of North Carolina at Chapel Hill, USA
Regulation of miRNA Production

Deepak Srivastava, Gladstone Institute of Cardiovascular Disease, USA
MicroRNA Regulation of Cardiac Cell Fate, Morphogenesis and Function

Robert H. Blelloch, University of California, San Francisco, USA
MicroRNA Regulation of Stem Cell Differentiation and De-Differentiation

Emily K. Pugach, University of Colorado, USA
Short Talk: The Role of miR-205 in Embryonic Skin Development and Stem Cells

Edward E. Morrisey, University of Pennsylvania, USA
Short Talk: Highly Efficient and Hdac2 Regulated Pluripotential Stem Cell Reprogramming by miR302/367

David M. Patrick, University of Texas Southwestern Medical Center, USA

Short Talk: Regulation of Erythroid Differentiation and Disease by MicroRNA-451

Workshop: MicroRNA Therapeutics: Medicinal Chemistry and Delivery (Joint)

***Joshua T. Mendell**, Johns Hopkins University, USA

Muthiah Manoharan, Alnylam Pharmaceuticals, Inc., USA
Medicinal Chemistry and Delivery of siRNAs and Antagomirs

David R. Corey, University of Texas Southwestern Medical Center, USA
Unusual Targets for Duplex RNAs

Sarah-Louise Gill, Royal College of Surgeons in Ireland (RCSI), Ireland
Short Talk: Delivery of MicroRNA Mimics to Cardiomyocytes using Ultrasound Responsive Microbubbles

Eric G. Marcusson, Regulus Therapeutics, USA
Short Talk: microRNA-21 as a Novel Therapeutic Target in Hepatocellular Carcinoma

MicroRNA Therapeutics: Applications (Joint)

***Eric N. Olson**, University of Texas Southwestern Medical Center at Dallas, USA

Sakari Kauppinen, Santaris Pharma A/S, Denmark
Targeting microRNAs for Therapeutics

Eva van Rooij, miRagen Therapeutics, USA
Therapeutic Regulation of miRNAs to Treat Cardiovascular Disease

Anders M. Näär, Massachusetts General Hospital, USA
Therapeutic Targeting of MicroRNAs to Control Cholesterol/Lipid Homeostasis

Shelly Adi-Harel, Weizmann Institute of Science, Israel
Short Talk: Epigenetic Silencing of p53-Regulated microRNAs in Lung Cancer