

# PROGRAMME

EMBO WORKSHOP ON

## RUNX TRANSCRIPTION FACTORS IN DEVELOPMENT AND DISEASE

ORGANISERS: Marella de Bruijn and Carol Stocking

**August 16-19, 2009, Oxford, UK**

### Sunday August 16

From 12.00 CHECK-IN  
12.00-17.30 REGISTRATION

16.30-17.30 WELCOME RECEPTION  
17.30-19.00 DINNER

**19.00-22.00 EVENING SESSION 1**  
**Chairpersons: Jim Neil, Stephen Nimer**  
19.00-19.10 OPENING OF MEETING

### **I. Runx proteins in development and homeostasis of epithelia and associated immune cells**

- 19.10-19.30 **Yoshiaki Ito** (Cancer Science Institute Singapore, Institute of Molecular and Cell Biology, Singapore)  
Role of RUNX3 in gastrointestinal tract cancers
- 19.30-19.50 **Ditsa Levanon** (Groner lab, Weizmann Institute of Science, Rehovot, Israel)  
New insights into the mechanism of inflammatory bowel disease (IBD) etiology in Runx3-deficient mice
- 19.50-20.10 **Ichiro Taniuchi** (Yokohama, Kanagawa, Riken Research Center for Allergy and Immunology, Japan)  
Essential requirement of Cbfb2 variant for Smad4-mediated TGF $\beta$  signals and for development and homeostasis of immune system
- 20.10-20.20 **Boris Ratsch** (Hamann lab, Exp. Rheumatology, Charité Berlin, Germany)  
*Short talk*  
Runx transcription factors control the expression of skin-homing receptors in CD4+ T cells
- 20.20-20.30 **Kosei Ito** (Graduate School of Biomedical Sciences, Nagasaki University, Japan)  
*Short talk*  
Runx3 attenuates oncogenic Wnt signaling that upregulates Cdx2 in gastric epithelial cells
- 20.30-21.00 COFFEE BREAK**

## **II. Runx proteins in development and homeostasis of the breast**

- 21.00-21.10      **Eli Raveh** (Gat lab, The Hebrew University of Jerusalem, Jerusalem, Israel)  
*Short talk*  
A possible role for Runx1 in mammary gland development - myoepithelial targeted knockout mice display a branching deficiency
- 21.10-21.30      **Matthew Naylor** (Garvan Institute of Medical Research, Darlinghurst, Australia)  
The osteogenic transcription factor Runx2 is essential for mammary gland development
- 21.30-21.50      **Karen Blyth** (Beatson Institute of Cancer Research, Glasgow, UK)  
Transgenic Runx2 expression causes pre-neoplastic changes in mammary epithelium
- 22:00**            **St Anne's cash bar open**

## Monday 17 August

08.00-9.00 Breakfast

### 09.00- 12.30 MORNING SESSION 1

Chairpersons: Nancy Speak, Yoram Groner

#### I. Runx proteins in development of the hematopoietic system

- 09.00-09.20 **Roger Patient** (Weatherall Institute of Molecular Medicine, Oxford, UK)  
Runx1 and CBF $\beta$  play distinct roles during the emergence of haematopoietic stem cells in the dorsal aorta
- 09.20-09.40 **Georges Lacaud** (Paterson Institute for Cancer Research, Manchester, UK)  
The differential transcriptional activities of Runx1 promoters define milestones during embryonic hematopoiesis
- 09.40-09.50 **Marella de Bruijn** (Weatherall Institute of Molecular Medicine, Oxford, UK)  
*Short talk*  
Non-redundant roles for *Runx1* alternative promoters at the onset of mouse definitive hematopoiesis
- 09.50-10.00 **Cherry Ng** (Osato lab, Cancer Science Institute, National University of Singapore, Singapore)  
*Short talk*  
An intronic Runx1 enhancer marks hematopoietic stem cells

#### II. Runx proteins in development of the nervous system

- 10.00-10.20 **Stefano Stifani** (McGill University, Montreal, Canada)  
Involvement of Runx1 in mammalian nervous system development: Neurogenesis and more
- 10.20-10.40 **Joriene de Nooij** (Jessell lab, Columbia University, New York, USA)  
Molecular pathways of proprioceptive sensory neuron differentiation

10.40-11.10 COFFEE BREAK

#### III. Runx transcriptional networks in non-mammalian development

- 11.10-11.30 **Uri Gat** (Hebrew University, Jerusalem, Israel)  
The evolution of the Runx factor network: Insights from the study of a basal progenitor in the sea anemone *Nematostella*
- 11.30-11.50 **James Coffman** (Mount Desert Island Biological Laboratory, Maine, USA)  
The Runx-regulated transcriptome of blastula stage sea urchin embryos
- 11.50-12.10 **Lisa Prazak** (Gergen lab, Department of Biochemistry and Cell Biology, Stony Brook, NY, USA)  
Functional dissection of a Runt response element in the *Drosophila* blastoderm embryo
- 12.10-12.30 **Suk-Chul Bae** (Chungbuk National University, Cheongju, South Korea)  
Identification of upstream regulators of Runt domain transcription factors

13.00-14.00 LUNCH

14.00-16.00 NETWORKING

16.00-18.00 POSTER-SESSION

18.00-19.30 DINNER

**19.30-22.00 EVENING SESSION 2**  
**Chairpersons: Gary Stein, Dong-Er Zhang**

**I. Runx proteins in bone development**

- 19.30-19.50 **Alexander Medvinsky** (MRC Centre for Regenerative Medicine, Institute for Stem Cell Research, University of Edinburgh, Edinburgh, UK)  
The non-redundant role of Runx1 in skeletal development
- 19.50-20.10 **Andrew van Wijnen** (UMass Medical School, Worcester, USA)  
The osteogenic transcription factor Runx2 regulates components of the fibroblast growth factor/proteoglycan signaling axis in osteoblasts
- 20.10-20.30 **Toshihisa Komori** (Nagasaki University, Toshihisa, Japan)  
Runx2 inhibits terminal differentiation of odontoblasts and induces transdifferentiation of odontoblasts into osteoblasts

**20.30-20.50 COFFEE BREAK**

**II. Runx proteins in leukemia and as therapy targets**

- 20.50-21.10 **Dong-Er Zhang** (University of California San Diego, USA)  
Molecular targets of t(8;21) fusion proteins in leukemia development
- 21.10-21.30 **Lucas Waltzer** (CNRS UMR5547 Centre de Biologie du Développement, Toulouse, France)  
An in vivo RNAi screen in Drosophila identifies modulators of the human leukaemogenic fusion protein RUNX1-ETO
- 21.30-21.40 **Christian Wichmann** (Grez lab, Georg-Speyer-Haus, Institute for Biomedical Research, Frankfurt Germany)  
*Short talk*  
Interference with RUNX1/ETO leukemogenic function by peptides targeting the oligomerization domain
- 21.40-22.00 **John Bushweller** (University of Virginia, Charlottesville, USA)  
Development of small molecule inhibitors of CBF fusion proteins
- 22.00 St Anne's cash bar open**

## Tuesday 18 August

08.00-9.00 Breakfast

### 09.00-12.20 MORNING SESSION 2 Chairpersons: Karen Blyth, Andrew van Wijnen

#### I. Runx proteins in proliferation and differentiation

- 09.00-09.20 **Alison Woollard** (University of Oxford, Oxford, UK)  
Regulating *C. elegans* stem cell divisions in time and space: The role of *Runx/CBFb*
- 09.20-09.40 **Motomi Osato** (Cancer Science Institute of Singapore, National University of Singapore, Singapore)  
Runx, niche, and stem cell quiescence
- 09.40-10.00 **Nancy Speck** (University of Pennsylvania School of Medicine, Philadelphia, USA)  
Loss of Necdin expression contributes to decreased quiescence of Runx1 deficient hematopoietic stem cells
- 10.00-10.20 **Anna Kilbey** (Neil lab, Institute of Comparative Medicine, Glasgow, UK)  
Direct regulation of sphingolipid metabolism and signaling by the Runx family
- 10.20-10.50 COFFEE BREAK**
- 10.50-11.10 **Claus Nerlov** (Institute for Stem Cell Biology, University of Edinburgh, Edinburgh, UK)  
Runx1 protein-protein interactions during the switch from proliferation to differentiation
- 11.10-11.30 **Alan Friedman** (Johns Hopkins University, Baltimore, USA)  
RUNX1 regulates hematopoietic proliferation and myeloid differentiation
- 11.30-11.50 **Adam Goldfarb** (University of Virginia School of Medicine, Charlottesville, Virginia, USA)  
Characterization of a megakaryocytic regulatory circuit comprising GATA-1, RUNX1, and P-TEFb
- 11.50-12.00 **Boet van Riel** (Grosveld lab, ErasmusMC, Rotterdam, Netherlands)  
*Short talk*  
Protein complex and target gene identification of Runx1 in erythroid cells
- 12.00-12.20 **Jennifer Westendorf** (Mayo Clinic, Rochester, MN, United States)  
Coactivator activator (CoAA) prevents the transcriptional activity of Runt domain transcription factor
- 13.00-14.00 LUNCH**

**14.30-17.20 AFTERNOON SESSION 1**  
**Chairpersons: Lucio Castilla, Ichiro Taniuchi**

**I. Runx proteins in epigenetic and microRNA-mediated gene regulation**

14.30-14.50 **Gary Stein** (University of Massachusetts Medical School, Worcester, USA)  
Runx-mediated epigenetic regulation of cell growth and phenotype for biological control and cancer

14.50-15.10 **Constanze Bonifer** (Leeds Institute of Molecular Medicine, University of Leeds, UK)  
Chromatin unfolding by Runx1 in hemangioblasts – a molecular explanation for differential requirements during specification versus maintenance of the hematopoietic gene expression program

15.10-15.20 **Gang Huang** (Cincinnati Children's Hospital Medical Center, Cincinnati, USA)  
*Short talk*  
Differential MLL interaction and H3K4me3 mark maintenance at PU.1 regulatory region - an epigenetic aspect of CBF related leukemogenic molecules

15.20-15.40 **Issay Kitabayashi** (National Cancer Center Research Institute, Tokyo, Japan)  
Roles of histone acetyltransferases MOZ/MORF in hematopoiesis and leukemia

15.40-15.50 **Janice Telfer** (University of Massachusetts Amherst, Amherst, USA)  
*Short talk*  
RUNX and lysine modifications in CD4 silencing

**15.50-16.20 COFFEE BREAK**

16.20-16.40 **Yoram Groner** (The Weizmann Institute of Science, Rehovot, Israel)  
A regulatory interplay between RUNX1 and miR-27a during megakaryopoiesis

16.40-17.00 **Clara Nervi** (University of Rome, "La Sapienza", Italy)  
Epigenetic regulation of microRNA-223 in normal and leukemic myelopoiesis

17.00-17.20 **Lucio Castilla** (University of Massachusetts Medical School, Westborough, USA)  
Role of microRNA cluster miR17-92 in CBFb-MYH11 acute myeloid leukemia

**18.00 GUIDED WALK THROUGH OXFORD TO ORIEL COLLEGE**  
(If you miss the walking tour, please make your way to Oriel College in time for the Group Photo at 7pm – approx 15/20 min walk, map in delegate pack)

**19.00 GROUP PHOTO**

**19.15-22.00 BANQUET AT ORIEL COLLEGE**

**22.00 Oriel cash bar open until midnight.**

## Wednesday 19 August

08.00-9.00 Breakfast

### 09.00-13.00 MORNING SESSION 3 Chairpersons: Carol Stocking, Mineo Kurokawa

#### I. Runx proteins in leukemia /lymphoma

- 09.00-09.20 **Stephen Nimer** (Memorial Sloan Kettering Cancer Center, New York, USA)  
Enzymatic modulation of Runx1 and Runx1-Eto function
- 09.20-09.40 **Masahiro Nakagawa** (Kurokawa lab, Department of Hematology & Oncology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan)  
Critical regulation of Nf- $\kappa$ B signaling by AML1/RUNX1 in normal and malignant hematopoietic cells
- 09.40-09.50 **Rhys Morgan** (Darley lab, Cardiff University, Cardiff, UK)  
*Short talk*  
The role of  $\gamma$ -catenin in acute myeloid leukaemia
- 09.50-10.10 **Ewan Cameron** (University of Glasgow, Glasgow, United Kingdom)  
TEL-RUNX1 confers lineage specific effects on haematopoietic progenitors
- 10.10-10.30 **Gareth Brady** (Farrell lab, Imperial College London, London, UK)  
Functional differences between RUNX1, RUNX3 and RUNX fusion genes in EBV-infected human B cells
- 10.30-11.00 COFFEE BREAK**
- 11.00-11.10 **Kimiko Shimizu** (Kitabayashi lab, National Cancer Center Research Institute, Tokyo, Japan)  
*Short talk*  
Hemizyosity of AML1/RUNX1 prevents T-cell malignancy induced by loss of p53
- 11.10-11.30 **Hironori Harada** (Research Institute for Radiation Biology and Medicine, Hiroshima University, Hiroshima, Japan)  
Two different AML1 mutants expressed in human CD34+ cells exhibit distinct molecular pathways and clinical features of MDS/AML
- 11.30-11.50 **James Mulloy** (Cincinnati Children's Hospital, Cincinnati, USA)  
Survival signalling in t(8;21) leukemia
- 11.50-12.10 **Christopher Klug** (The University of Alabama at Birmingham, Birmingham, AL, USA)  
Defining leukemia-initiating cells and cooperating pathways in development of core-binding factor-associated acute myeloid leukemia
- 12.10-12.30 **Paul Liu** (NIH, Bethesda, MD, USA)  
c-Kit mutations D816Y/V cooperate with CFBF-MYH11 to accelerate leukemogenesis in mice
- 12.30-13.00 SUMMARY AND HIGHLIGHTS OF THE MEETING**
- 13.00-14.00 LUNCH**
- 14.00-19.00 OPTIONAL: POST-CONFERENCE TOUR TO ROUSHAM PARK**