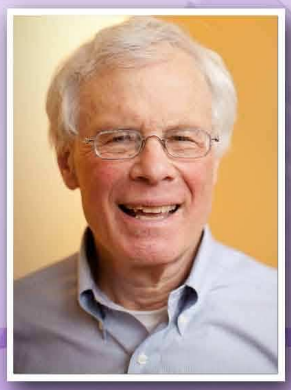
IMCB Invited Speaker



Speaker : **Prof. Harvey Lodish**
Member, Whitehead Institute for Biomedical Research,
Professor of Biology and Professor of Engineering,
Massachusetts Institute of Technology, USA

Date : 31 July 2012 (Tuesday)

Time : 11:00AM - 12:00PM

Venue : Level 2M, Aspiration Theatrette, Matrix, Biopolis

Host : Prof. Walter Hunziker

Seminar :

Self-renewal of hematopoietic progenitors and stem cells

Despite the fact that much progress has been made in the understanding of self-renewal of embryonic stem and iPS cells, the intracellular signaling proteins that regulate self-renewal of stem and progenitor cells in adult animals are largely unclear. Recently we showed that glucocorticoids positively regulate red blood cell formation by triggering limited self-renewal of an early erythroid progenitor, the burst forming unit-erythroid (BFU-E), allowing over time formation over time of more restricted progenitors and mature red blood cells. More recently we identified an RNA binding protein that is indispensable for glucocorticoid mediated BFU-E self-renewal and that is a direct target of the glucocorticoid receptor. This protein preferentially binds to mRNAs induced during later stages of erythroid differentiation, including the mRNA encoding Aff1, a key transcription factor required for terminal erythroid differentiation, and negatively regulates its expression. More generally we uncovered a novel mechanism by which self-renewal is facilitated – an RNA- bonding protein triggers the degradation of key mRNAs essential for progression to the next differentiation stage.

About the Speaker :

A leader in the field of molecular and cellular biology, Dr. Harvey F. Lodish has isolated and cloned numerous surface membrane proteins that play a role in blood development, cell signaling, glucose transport, and lipid metabolism. He earned his PhD at the Rockefeller University in 1966. A Founding Member of the Whitehead Institute, Dr. Lodish joined the MIT faculty in 1968 and has been a professor of biology since 1976 and professor of bioengineering since 1999. Dr. Lodish is also the lead author of the widely used textbook Molecular Cell Biology. The book has been translated into ten languages and the seventh edition appeared in April 2012. He is a Member of the National Academy of Sciences, a Fellow of the American Association for the Advancement of Science, the American Academy of Arts and Sciences, the American Academy of Microbiology, and an Associate (Foreign) Member of the European Molecular Biology Organization.

Dr. Lodish is a member of the Board of Trustees of Children's Hospital, Boston, where he also is Chair of the Research Committee of the Board of Trustees. He is also Chair of the Scientific Advisory Board of the Massachusetts Life Sciences Center, the group charged with oversight of the state's 10- year $1 billion investment in the life sciences. Dr. Lodish was a founder and scientific advisory board member of Genzyme, Arris, Millennium and Allozyne.

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