

1st Hungarian Epigenetics Meeting

20-21 September, 2012.

Semmelweis University, Nagyvárad Tér, Budapest

Organizers: Tamás Arányi and Bálint L. Bálint.



Scientific Organizing Comity:

Tamás Arányi, Bálint L. Bálint, Imre Boros,
András Falus and László Nagy

Speakers:

Imre Boros Szeged University, Hungary

László Nagy Debrecen University, Hungary

Peter Holland University of Oxford, UK

Takuya Imamura Kyoto University, Japan

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Details and registration:

<http://epigenetics-hungary.eventbrite.com/>

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With the Support of the Hungarian
Biochemical Society
and the Semmelweis Genomic Network

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MicroRNAs: biogenesis, regulation of gene expression in carcinogenesis, clinical applications

MicroRNAs (miRNAs) are a class of non-coding RNAs that regulate gene expression at posttranscriptional level. The 19-24nt mature form is the result of a processing process consisting of several sequential steps in both the cell nucleus and the cytoplasm. Emerging amount of evidence confirms the role of miRNAs in carcinogenesis. Among their target genes, numerous regulators of cell cycle, cell proliferation, DNA repair and apoptosis can be found, therefore miRNAs are implicated in the initiation and progression of cancer, in tissue invasion and in metastasis formation as well. They can act as oncogenes (oncomiRs) and tumorsuppressors (anti-oncomiRs) by targeting tumorsuppressor genes and oncogenes, respectively. MiRNA profiles supply information about the origin and differentiation state of tumours, moreover, their altered levels often can be detected in premalignant conditions. MiRNAs have key role in fine-tuning diverse cell functions. Many of them are involved in the regulation of haemopoiesis. Altered miRNA expression levels were observed in different types of leukemia, but their exact role in the pathogenesis has not been elucidated. However, there are successful attempts to apply miRNAs in the diagnosis and prognosis of acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML). Measurement of the expression levels may help clinicians to choose the most suitable therapy, or even to predict the success of administering different kinds of chemotherapeutic drugs. MiRNAs are regarded as promising therapeutic targets: antitumour effect can be achieved by increasing or decreasing the level of them, which can also contribute to improved results of other therapeutic strategies.