

ALEŠ KOVAŘÍK, Ph.D.

Date of birth: 24. 11. 1960

Place of birth: Třebíč, Czech Republic

Position: Group leader

Employer: Institute of Biophysics, Academy of Sciences of the Czech Republic

Experience:

1985- M.Sc. degree in biochemistry. Masaryk University, Brno, CZ

1986-1990 Ph.D. degree in immunology and virology. Cancer Research Institute, Bratislava, SK

1991-1992 Post-doctoral fellow at the Imperial Cancer Research Fund, London, UK

1993- now Head of the Laboratory of Molecular Epigenetics of the Institute of Biophysics, Academy of Sciences of the Czech Republic

Fellowships:

1995 - UICC's ICRET fellowship at the Imperial Cancer Research Fund, London – 90 days

1998 – 2008 FWO fellowship, Laboratory of Genetics, University of Gent, Belgium – 30 days/year

2002 – 2004 Royal Society fellowship, University of London, UK – 15 days

International projects:

2004-2005 – Czech-French Barrande program in collaboration with INRA Versailles, France

2007-2009- Czech-French Barrande program in collaboration with INRA Rennes, France

2011-2012 -Czech-French Barrande program in collaboration with INRA Rennes, France

2008-2009- PhD training program from the Spanish Ministry of Education

2010-2011 – Moel's fellowship from the Austrian government (post doc training)

2011-2012 -Czech-French Barrande program in collaboration with University of Rennes, France

2011 – host lab of a post doc receiving an EMBO fellowship

Awards:

2004 – Prize of the Head of the Grant Agency of the Czech Republic (The role of epigenetics factors in regulation of gene expression in higher plants)

Patents:

The invention relates to 1-(2-deoxy-alpha-D-erythro-pentofuranosyl)-5-azacytosine of formula (I) for use as a hypomethylating drug applicable for epigenetic therapy of cancer and other epigenetically determined diseases and further includes the use of the compound of formula (I) for manufacturing of a pharmaceutical composition for epigenetic therapy of cancer and other epigenetically determined diseases. No WO 2008083634 A1: 1-(2-deoxy-alpha-d-erythro-pentofuranosyl)-5-azacytosine for use as drug.

Number of cites in WEB of Sciences:

Total: 3345, H-index: 35

Scientific profile of the Laboratory of Molecular Epigenetics:

We focus on (i) structural changes in early polyploid generations important in generating genetic diversity. (ii) epigenetic control of gene expression and heritability of epigenetic DNA methylation and covalent modifications of chromatin. (iii) evolution of repeated sequences in the cell nucleus. We are committed to provide training expertise in various kinds of genomic analysis at the local and international levels. Our research has an impact on policy-making related to improved conservation strategies in sensitive areas and to the conservation of genetic resources.

Relevant links

Lab web page: <http://www.ibp.cz/en/departments/molecular-epigenetics/>

List of papers: <http://publicationslist.org/kovarik>

ResearchGate: https://www.researchgate.net/profile/Ales_Kovarik/

Milestones and major achievements:

The Laboratory of Molecular Epigenetics, headed by Ales Kovarik was established in 1996. It's 15 years history can be characterized by several milestones such as: (i) discovery of an epigenetic switch between the post-transcriptional and transcriptional transgene silencing, (ii) the influences of epigenetic states of a silencing trigger locus to its in trans silencing capacities, (iii) rapid homogenisation and epigenetic silencing of rDNA loci in allopolyploid species, (iv) discovery of an unusual organization of rDNA units in some plant genomes, (v) unusual structural features of satellite repeats.

Ten most highly cited publications (Genetics)

Soltis, D.E., Soltis, P.E., Pires, J.C., **Kovarik, A.**, Tate, J.A., Mavrodiev, E. (2004). Recent and recurrent polyploidy in *Tragopogon* (Asteracea): Cytogenetic, genomic, and genetic comparisons. *Biological Journal of Linnean Society* 82: 485-501 (**181 cites**)

Kovarik, A., Pires, J.C., Leitch, A.R., Lim, K.Y., Sherwood, A., Matyasek, R., Rocca, J., Soltis, D.E., Soltis, P.S. (2005) Rapid concerted evolution of nuclear ribosomal DNA in two allopolyploids of recent and recurrent origin. *Genetics* 169: 931-44 (**114 cites**)

Kovařík, A., Peat, N., Wilson, D., Gendler, S. and Taylor-Papadimitriou J (1993) Analysis of the tissue specific promoter of the MUC1 gene. *J. Biol. Chem.* 268, 9917-9926, (**113 cites**)

Koukalová, B., **Kovařík, A.**, Fajkus, J., Siroký, J. (1997) Chromatin fragmentation associated with apoptotic changes in tobacco cells exposed to cold stress. *FEBS Lett.* 414, 289-292 (**103 cites**)

Fajkus, J. **Kovařík, A.**, Královics, R., Bezděk, M. (1995) Organization of telomeric and subtelomeric chromatin in the higher plant *Nicotiana tabacum*. *Molecular Genetics and Genomics.* 247, 633-638 (**97 cites**)

Kovarik A., Matyasek, R., Lim, K.Y., Skalicka, K., Koukalova, B., Knapp, S., Chase, M., and Leitch, A.R. (2004) Concerted evolution of 18-5.8-26S rDNA repeats in *Nicotiana* allotetraploids. *Biological Journal of Linnean Society* 82: 615-625 (**93 cites**)

Lim, K.Y., **Kovarik, A.**, Matyasek, R., Bezdek, M, Lichtenstein, C.P, Leitch, A.R. (2000) Gene conversion of ribosomal DNA in *Nicotiana tabacum* is associated with undermethylated, active gene units. *Chromosoma* 109: 161-172 (**92 cites**)

Lim, K.Y., Matyasek, R., **Kovarik, A.** and Leitch, A.R. (2004) Genome evolution in allotetraploid *Nicotiana*. *Biological Journal of Linnean Society* 82: 599-605 (**92 cites**)

Skalicka, K., Lim, K.Y., Matyasek, R., Matzke, M.A., Leitch, A.R., **Kovarik, A.** (2005) Preferential elimination of repeated DNA sequences from the paternal, *N. tomentosiformis* genome donor of a synthetic, allotetraploid tobacco. *New Phytologist* 166, 291- 303 (**82 cites**)

Kovařík, A., Koukalová, B. Bezděk, M., Opatrný, Z. (1997) Hypermethylation of tobacco heterochromatic loci in response to osmotic stress. *Theor. Appl. Genet.* 95, 301-306 (**81 cites**)

Skalická, K., Lim, K.Y. Matyásek, R., Koukalová, B., Leitch, A.R., **Kovarik, A.** (2003) Rapid evolution of parental rDNA in a synthetic tobacco allotetraploid line. *American Journal of Botany* 90, 988-996 (**62 cites**)

