### conferenceseries.com

2<sup>nd</sup> International Conference on

# **Transcriptomics**

September 12-14, 2016 Philadelphia, USA



## Lyudmila Gulyaeva

Russia Novosibirsk State University, Russia

### MicroRNA expression profile in breast cancer

icroRNAs (miRs) play essential role in epigenetic alterations of gene expression. Dysregulation of microRNAs expression Mwas observed in many types of cancer including breast cancer (BC). We aimed to determine the microRNA expression in breast tumor samples (n=149) with various receptor phenotypes. Bioinformatics analyses with help of the "Pathway Studio" program determined potential microRNAs: miR-21, 221, 200a, 146, 17, 27, 155, 125 and 16, which are significantly correlated with the expression of ER, PR and HER2. Our study has shown that expression of oncogenic miR-21 and miR-221 increased mainly in the triple negative BC (TNBC), whereas miR-200a and miR-146 were highly expressed in the ER-positive BC. The decreased expression of miR-17 was found in TNBC. There was no significant correlation between miR-27,-155 expression and BC phenotypes. For the first time, we have shown that the elevated level of miR-16 expression is correlated with high expression of ER and HER2. The in silico analysis has shown that studied oncogenic miRs can target ERa, PR, CYP19. Moreover, the expression profile of miR-21, 221, 155, 222 and 205 can change under neoadjuvant radio- and chemotherapy of BC patients. To understand the reasons for the changes in the miR profile, we have studied the expression of studied miRs together with miR-326,-3573,-483,-126a,--1843a,-190a,-6327, their "host" genes and target mRNAs, involved in cell proliferation and differentiation in liver, breast, ovaries and uterus of rats treated with DDT and benzo(a)pyrene. Tissue-specific expression of studied miRs was found, that could be explained by the tissue-specific activation of nuclear receptors by xenobiotics. Thus, the results confirmed the role of microRNAs in carcinogenesis of mammary gland that may open new strategies in breast cancer diagnostics and treatment.

#### **Biography**

Lyudmila Gulyaeva, PhD, Doctor of Biology is currently a Professor of Molecular Biology and Biochemistry at Novosibirsk State University, Head of the Molecular Carcinogenesis Laboratory of Institute of Molecular Biology and Biophysics, Novosibirsk, Russia. She got her PhD in biochemistry in 1986 and Doctor Degree in 2000. She has spent most of her scientific carrier studying drug-metabolizing enzymes and their associations with cancer. A special interest of her research is receptor-mediated mechanism of hormone-related cancer and role of microRNA in regulation of target genes. The results of her scientific activity were published in over 180 scientific papers.

gulyaeva@niimbb.ru

Notes: