

2014

Health & Medical Sciences Abstracts

Second Annual International
Conference on

Health & Medical Sciences

5-8 May 2014, Athens, Greece

Edited by Gregory T. Papanikos

THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH



Health & Medical Sciences
Abstracts

2nd Annual International
Conference on

Health & Medical Sciences
5-8 May 2014, Athens, Greece

Edited by Gregory T. Papanikos

First Published in Athens, Greece by the Athens Institute for Education and Research.

ISBN: 978-618-5065-34-8

All rights reserved. No part of this publication may be reproduced, stored, retrieved system, or transmitted, in any form or by any means, without the written permission of the publisher, nor be otherwise circulated in any form of binding or cover.

8 Valaoritou Street
Kolonaki, 10671 Athens, Greece
www.atiner.gr

©Copyright 2014 by the Athens Institute for Education and Research. The individual essays remain the intellectual properties of the contributors.

Vanda Repiska

Professor, Comenius University, Slovak Republic

Iveta Zmetakova

Postdoc, Cancer Research Institute of SAS, Slovak Republic

Viera Kajabova

Doctorand, Cancer Research Institute of SAS, Slovak Republic

Bozena Smolkova

Doctorand, Cancer Research Institute of SAS, Slovak Republic

Tomas Krivulcik

Doctorand, Cancer Research Institute of SAS, Slovak Republic

Ludovit Danihel

Head of Institute, Institute of Pathological Anatomy, Slovak Republic

Helena Gbelcova

Postdoc, Institute of Chemical Technology, Czech Republic

Daniel Bohmer

Head of Institute, Institute of Medical Biology, Slovak Republic

&

Ivana Fridrichova

Head of Department, Cancer Research Institute of SAS, Slovak Republic

DNA Hypermethylation Detected in Invasive Breast Cancer

Objective: DNA methylation as an early event in breast carcinogenesis has been frequently studied in tumour samples. The aim of this study was to compare the relationship between DNA methylation levels of genes associated with invasivity and metastasising and aberrant protein expression (breast cancer progression).

Methods: A total 55 healthy controls and 185 patients with primary breast cancer, as well as plasma and peripheral blood cells has been analysed by using pyrosequencing method. The expression of 11 proteins in paraffin-embedded biopsy was evaluated by immunohistochemistry. Genes containing CpG islands in promotor region were suggested for screening because they could be epigenetic upregulated with high probability. DNA methylation of APC, ADAM23, CXCL12, ESR1, PGR B, CDH1, RASSF1A, SYK, TIMP3, BRMS1 and SOCS1 genes has been detected.

Results: DNA hypermethylation of tumor suppressor genes is tumor-specific and could be used for recognition of tumor cells. We observed higher methylation status for 4 genes (RASSF1A, APC, CXCL12 and ADAM23) from 11 genes evaluated in tumors. The highest promoter methylation level was 88%, detected in RASSF1A and APC genes. Variable expression profiles were identified in analyzed genes ranging from negative expression to high expression. Our present results indicate the variability in expression of the proteins studied in tumor tissue of patients with breast cancer.

Conclusion: We can conclude that the quantitative analyses of tumor DNA methylation in any of RASSF1A, ADAM23, CXCL12 and APC genes could have prognostic potential. Supported by the grant APVV-0076-10 - the Slovak Research and Development Agency and Research and Development Operational Programme (ERDF)-26240220058.