Submitted lectures

Invited speakers

Howard Cuckle:

Comparing different commercial cfDNA tests for aneuploidy

Department of Obstetrics and Gynecology, Tel Aviv University, Tel Aviv, Israel; Department of Obstetrics and Gynecology, Columbia University Medical Center, New York, NY, USA; Reproductive Epidemiology, University of Leeds, Leeds, UK

Erik Sistermans:

Introducing NIPT analysis in the Netherlands part II, from TRIDENT-1 to TRIDENT-2

VU University Medical Center Amsterdam, the Netherlands

Howard Cuckel.:

Invasive and non-invasive prenatal detection of micro-deletions

Department of Obstetrics and Gynecology, Tel Aviv University, Tel Aviv, Israel; Department of Obstetrics and Gynecology, Columbia University Medical Center, New York, NY, USA; Reproductive Epidemiology, University of Leeds, Leeds, UK

Ripudaman Singh¹, Lotte Hatt¹, Inga Baasch Christesen¹, Katarina Ravn¹, Olav Bjørn Petersen^{3,5}, Niels Uldbjerg³, Rikke Christensen⁴, Ida Vogel^{4,5}, Palle Schelde¹

Fetal Cells in Maternal Blood for Prenatal Diagnosis – The story so far

¹ARCEDI Biotech ApS, Vejle, Denmark.² Aarhus University, Aarhus, Denmark. ³ Department of Obstetrics and Gynecology, Aarhus University Hospital, Aarhus, Denmark., ⁴ Department of Clinical Genetics, Aarhus University Hospital, Aarhus, Denmark. ⁵ Centre for Prenatal Diagnostics, Aarhus University Hospital, Aarhus, Denmark.

Folkert Asselbergs: Cardiomyopathies: a genetic and phenotypic heterogeneous group of diseases Department of Cardiology, Division Heart & Lungs University Medical Center Utrecht, the Netherlands

Christoph Sensen:

Circulating nucleic acids as early markers for infectious and chronic diseases

Institute of Computational Biotechnology, Graz University of Technology, Graz, Austria

NIPT

*Marian Grendár*¹, Dušan Loderer^{2,3}, Iveta Švecová², Zuzana Laučeková², Michaela Hrtánková², Andrea Hornáková³, Bálint Nagy⁴, Zora Lasabová⁵, Ján Danko²:

Decreasing the no call rate of Non-Invasive Prenatal Testing

^{1.} Bioinformatic unit, Biomedical Center Martin, Jessenius Faculty of Medicine, Comenius University, Martin, Slovakia, ^{2.}Department of Obstetrics and Gynecology, Jessenius Faculty of Medicine, Comenius University, Martin, Slovakia,^{3.} Division of Molecular Biology, Biomedical Center Martin, Jessenius Faculty of Medicine, Comenius University, Martin, Slovakia,^{4.} Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary,^{5.} Division of Oncology, Biomedical Center Martin, Jessenius Faculty of Medicine, Comenius University, Martin, Slovakia

Bálint Tobiás¹, Lili Készné Fodor¹, Sarolta Szőke¹, Gábor Molnár¹, Valéria Klujber Bernadett Balla¹, Kövesdi Andrea¹, Péter Lakatos^{1,2}, János P. Kósa^{1,2}:

PANORAMA® the SNP sequencing-based NIPT - Hungarian results in the light of American data

¹PentaCore Laboratory, Budapest, Hungary,² Semmelweis University, I. Dept. of Internal Medicine Budapest, Hungary

Darija Strah¹, Nina Ružić Gorenjec²:

First trimester screening for Down's syndrome by combined nuchal translucency and prenatal cf-DNA testing

¹. Strah Diagnostic Centre, Domzale, Slovenia, ². Institute for Biostatistics and Medical Informatics, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia

Olga Török:

Cff-DNA based NIPTs in Hungary

Institute of Obstetrics and Gynecology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Ilona Hromadnikova^{1,2}, *Katerina Kotlabova*^{1,2}, *Katarina Ivankova*², *Ladislav Krofta*²:

First trimester screening of circulating C19MC microRNAs and the evaluation of their potential to predict the onset of preeclampsia and FGR

¹ Department of Molecular Biology and Cell Pathology, Third Faculty of Medicine, Charles University, Ruska 87, 100 00 Prague, Czech Republic,² Institute for the Care of the Mother and Child, Third Faculty of Medicine, Charles University, Podolskenabrezi 157/36, 147 00 Prague, Czech Republic

Ilona Hromadnikova^{1,2}, *Katerina Kotlabova*^{1,2}, *Ladislav Krofta*², *Filip Hron*²:

Follow-up of gestational trophoblastic disease/neoplasia via quantification of circulating nucleic acids of placental origin using C19MC microRNAs, hypermethylated RASSF1A and SRY sequences

¹ Department of Molecular Biology and Cell Pathology, Third Faculty of Medicine, Charles University, Ruska 87, 100 00 Prague, Czech Republic,² Institute for the Care of the Mother and Child, Third Faculty of Medicine, Charles University, Podolskenabrezi 157/36, 147 00 Prague, Czech Republic

Non-invasive detection of heart- and cardiovascular diseases

Zoltán Csanádi:

Electrical storm in the brain and in the heart: Epilepsy and Brugada syndrome *Institute of Cardiology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary*

Orsolya Biró, Bálint Nagy:

Non-invasive prenatal testing for congenital heart disease – cell-free nucleic acid and protein biomarkers in maternal blood

¹First Department of Obstetrics and Gynaecology, Semmelweis University, Budapest, Hungary,²Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Orsolya Biró¹, János Rigó Jr.¹, Bálint Nagy²:

Maternal methylenetetrahydrofolate reductase (MTHFR) polymorphisms: risk factors for congenital heart disease?

¹First Department of Obstetrics and Gynaecology, Semmelweis University, Budapest, Hungary ²Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Non-invasive detection of cancer

Péter Igaz:

Circulating microRNAs and tumors 2nd Department of Medicine, Semmelweis University, Budapest, Hungary

*Gergő Papp*¹; Ilona Kovalszky¹; Csaba Bödör^{1,2}:

The role of circulating cell-free DNA as a cancer biomarker

1st Department of Pathology and Experimental Cancer Research, Semmelweis University, Budapest, Hungary,MTA-SE Lendület Molecular Oncohematology Research Group, Budapest, Hungary,1st Department of Pathology and Experimental Cancer Research, Semmelweis University, Budapest, Hungary

Róbert Póka: Free nucleic acids in ovarian cancer

Institute of Obstetrics and Gynecology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Pál Perge¹, Henriett Butz², Raffaele Pezzani³, Irina Bancos⁴, Zoltán Nagy¹, Ábel Decmann¹, Michaela Luconi⁵, Massimo Mannelli⁵, Edit I. Buzás⁶, Miklós Tóth¹, Marco Boscaro³, Attila Patócs^{2,7}, Peter Igaz^{1,6}:

Evaluation of circulating exosomal microRNAs in benign and malignant adrenocortical tumors

¹2nd Department of Medicine, Semmelweis University, 1088 Budapest, Szentkirályi str. 46, Hungary,²Molecular Medicine Research Group, Hungarian Academy of Sciences and Semmelweis University, 1088 Budapest, Szentkirályi str. 46, Hungary,³Endocrinology Unit, Department of Medicine, University of Padua, Via Ospedale, 105, 35128 Padova, Italy,⁴Division of Endocrinology, Diabetes, Metabolism and Nutrition, Department of Internal Medicine, Mayo Clinic, 200 First Street SW, Rochester, MN 55905 USA, ⁵Department of Experimental and Clinical Biomedical Sciences, Endocrinology Unit, University of Florence, VialePieraccini 6, 50139 Florence, Italy, ⁶Department of Genetics, Cell- and Immunobiology, Semmelweis University, 1089 Budapest, Nagyvárad tér4., Hungary, ⁷"Lendület-2013" Research Group, Hungarian Academy of Sciences and Semmelweis University, 1088 Budapest, Szentkirályi str. 46, Hungary

Gábor Méhes, Judit Bedekovics, Attila Mokánszki:

Analysis of oncogenic mutations from liquid biopdy samples: potentials and limitations in oncology

Department of Pathology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Ilona Kovalszky, Lászlóné Oláh, Krisztina Császár, Krisztina Egedi, Csaba Bödör: **Our first experiences with testing EGFR T790M resistance mutation in liquid biopsy** *Semmelweis University 1st Department of Pathology & Experimental Cancer Research, Budapest, Hungary*

*Vilmos Adleff*¹, Jillian Phallen¹, Alessandro Leal¹, Brian Woodward², Patrick M. Forde¹, Kristen A. Marrone¹, Julie R. Brahmer¹, Jacob Fiksel¹, Stephen Cristiano¹, Daniel C. Bruhm¹, Elizabeth Weihe², Valsamo Anagnostou¹, Robert B. Scharpf¹, Hatim Husain², Victor E. Velculescu¹: Cell-free tumor load as possible predictive marker for TKI response in NSCLC therapy

¹ The Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University School of Medicine, Baltimore, MD 21287, USA, ² Division of Hematology and Oncology, Moores Cancer Center, University of California, San Diego, La Jolla, CA 92093, USA

Zora Lasabová^{1*}, Tatiana Burjanivová², Bibiana Malicherová^{1,3}, Marián Grendár⁴, Barbora Váňová, ^{1,2},Lukáš Plank^{1,3}:

Non-invasive detection of biomarkers in plasma of cancer patients using droplet digital PCR – overview, first experiences and perspectives

¹Division Oncology, Biomedical Center Martin, Comenius University in Bratislava, Slovakia, Jessenius Faculty of Medicine in Martin, Slovakia,²Department of Molecular Biology, Comenius University in Bratislava, Jessenius Faculty of Medicine in Martin, Slovakia,³Department of Pathological Anatomy, Comenius University in Bratislava, Slovakia, Jessenius Faculty of Medicine and University Hospital in Martin, Slovakia,⁴Department of Bioinformatics, Biomedical Center Martin, Comenius University in Bratislava, Slovakia, Jessenius Faculty of Medicine in Martin, Slovakia, Slovakia, Jessenius Faculty of Medicine in Martin, Slovakia

Judit Keserű¹, Beáta Soltész¹, János Lukács², Róbert Póka², Bálint Nagy¹: Correlation of plasma mitochondrialDNA copy number and status of ovarian cancer patients

¹Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary,²Institute of Obstetrics and Gynaecology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Melinda Szilágyi-Bónizs¹, Éva Márton¹, János Lukács², Beáta Soltész¹, Eszter Janka³, András Penyige¹, Róbert Póka², Bálint Nagy¹:

MiR200a, miR200b and miR200c are promising candidate biomarkers in epithelial ovarian cancer

¹ Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary,²Department of Obstetrics and Gynecology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary,³Department of Dermatology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Beáta Soltész¹, János Lukács², Edina Szilágyi¹, Róbert Póka², Bálint Nagy¹:

Cell-free, long non-coding RNA in the diagnosis of ovarian cancer

¹Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary, ²Institute of Obstetrics and Gynecology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Naci Cine¹, *Nilufer Sertdemir¹*, *Duygu Yavuz¹*, *Merve Gokbayrak¹*, *Eda Guzdolu¹*, *Gulhan Demir¹*, *Devrim Cabuk²*, *Ulas Isik²*, *Ercan Ozden²*, *Kazim Uygun²*, *Gorkem Aksu³*, *Hakan Savli¹*:

NGS based ctDNA-liquide biopsy analysis in Turkish cancer patients

^{1.} Kocaeli University Faculty of Medicine, Department of Medical Genetic, Izmit, Turkey,^{2.} Kocaeli University Faculty of Medicine, Department of Medical Oncology, Izmit, Turkey,³Kocaeli University Faculty of Medicine, Department of Radiation Oncology, Izmit, Turkey

Ozkan Ozden, Ilhami Gok:

Deacetylation of JAK1 and Its Association with IL-6-Induced Inflammatory Response in Cancer

Kafkas University, Faculty of Engineering and Architecture, Department of Bioengineering Central Campus, 36100, Kars, TURKEY

Beáta Soltész¹, Orsolya Biró², János Lukács³, András Penyige¹, Róbert Póka³, Bálint Nagy¹: Cell-free miRNAs as potential biomarkers in the diagnosis of ovarian cancer

¹Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary ²Department of Obstetrics and Gynecology, Semmelweis University, Budapest, Hungary, ³Institute of Obstetrics and Gynecology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Detection of infectious diseases and others topics

Tomáš Szemes^{1,3,5}, Andrej Baláž ^{2,3,5}, Michal Kajsík^{1,2}, Iveta Gazdaricová², Orsolya Bíró⁴, Bálint Nagy⁴, Ján Turňa^{1,2}, Jaroslav Budiš^{2,3,5}:

Are phages part of our immunity?

¹Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia, ²University Science Park; Comenius University, Bratislava, Slovakia, ³Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovakia,⁴ Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary, ⁵Geneton Ltd; Bratislava, Slovakia

Aleksandar Vojta, Goran Josipović, Vanja Tadić, Vlatka Zoldoš[;]:

Editing the epigenome using a comprehensive CRISPR/Cas9-based molecular toolbox Department of Biology, Faculty of Science, University of Zagreb, Zagreb, Croatia

Peter Celec, Barbora Vlková:

Causes and consequences of the variability of extracellular DNA

Institute of Molecular Biomedicine, Faculty of Medicine, Comenius University, Bratislava, Slovakia

Emese Domonkos, *Ľubica Janovičová*, *Manuel Steinhardt*, *Tim Höpfner*, *Thomas Stehle*, *Peter Celec*:

Sex differences in plasma deoxyribonuclease activity in rats Institute of Molecular Biomedicine, Faculty of Medicine, Comenius University, Sasinkova 4, Bratislava, Slovakia

Ľubica Janovičová, Barbora Konečná, Jozef Čonka, Lucia Lauková, Peter Celec:

Variability in deoxyribonuclease activity and extracellular DNA in mice

Institute of Molecular Biomedicine, Faculty of Medicine, Comenius University, Bratislava, Slovakia

Gergely Buglyó¹, Zsófia Magyar², Éva Romicsné Görbe², Rita Bánusz³, Monika Csóka³, Tamás Micsik⁴, Zsanett Berki¹, Péter Varga², Zoltán Sápi⁴, Bálint Nagy¹:

Novel miRNA downregulations in blastemal Wilms' tumor: an FFPE-based study

¹Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary,²1st Department of Obstetrics and Gynaecology, Semmelweis University, Budapest, Hungary,³2nd Department of Paediatrics, Semmelweis University, Budapest, Hungary,⁴1st Department of Pathology and Experimental Cancer Research, Semmelweis University, Budapest, Hungary

Posters

Hrindová B., Matějčková I., Zembol F., Bittóová M., Koudová M., Stejskal D.: Automation of Cell-Free DNA Testing on Ion Proton System

Centre of Medical Genetics and Reproductive Medicine, Gennet, Ltd., Kostelní 9, Prague 7, Czech Republic

Éva Márton¹, János Lukács², Réka Szabó¹, Beáta Soltész¹, Eszter Janka³, Róbert Póka², Bálint Nagy¹, Melinda Szilágyi-Bónizs¹

Study the role of miR141 and miR429 in the diagnosis of epithelial ovarian cancer

¹ Department of Human Genetics, Faculty of Medicine, University of Debrecen, Debrecen, Hungary, ²Department of Obstetrics and Gynecology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary, ³Department of Dermatology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Sayli A, Akdeniz E, Araz I, Kahveci N, Kokturk G, Ture N, Bektas M, Serim G, Bilgin Z, Ozdemir D.:

Determination of Common Chromosomal Abnormalities with NIFTY Test (Non-invasive Fetal Trisomy Test) in Turkey

GENOKS Genetic Diagnostic Center, Ankara, Turkey

Krisztina Szirák¹, Beáta Soltész¹, Orsolya Hajas², Réka Urbancsek², Edina Nagy-Baló², András Penyige¹, Zoltán Csanádi², Bálint Nagy¹:

Determination of PITX2 and NEURL1 single nucleotide polymorphisms in atrial fibrillation ¹University of Debrecen, Faculty of Medicine, Department of Human Genetics, Debrecen, Hungary; ²University of Debrecen, Faculty of Medicine, Institute of Cardiology, Debrecen, Hungary

Katarina Zelinova^{1,2}, Marianna Jagelkova^{1,2}, Zuzana Laucekova², Zuzana Dankova¹, Marian Grendar³, Karol Dokus^{2,4}

Comparative analysis of the somatic mutation profiles in monitored 26 genes in circulating tumor DNA from breast cancer patients before, after surgery and after adjuvant chemotherapy – the pilot study

¹ Department of Oncology, Biomedical Center Martin, Jessenius faculty of medicine in Martin, Comenius University in Bratislava (JFM CU), 036 01Martin, Slovakia, ² Department of Obstetrics and Gynecology, Martin University Hospital and JFM CU, 036 01 Martin, Slovakia, ³ Department of Bioinformatics, Biomedical Center Martin JFM CU, 036 01 Martin, Slovakia, ⁴ II. Department of Obstertrics and Gynecology, Slovak Medical University, Faculty Hospital with Polyclinic of F. D. Roosevelt, 975 17 Banska Bystrica, Slovakia

Company presentations:

Zhou Yafeng: Introduction NIFTY test (NIPT) and comparison of the q-PCR technology with NGS technology BGI International Dx Unit

Zhou Yafeng: Introduction our Sentis(cancer panel) with our own sequencer of NGS technology *BGI International Dx Unit*