



PÉCSI TUDOMÁNYEGYETEM SZENTÁGOTTHAI JÁNOS KUTATÓKÖZPONT

## Meghívó

Tisztelettel meghívunk minden kedves érdeklődőt a Pécsi Tudományegyetem Szentágotthai János Kutatóközpont és az Idegtudományi Centrum közös szervezésében megrendezendő következő szemináriumra

**2019. május 24-én 13.00 órától a B001. előadóba.**

(7624 Pécs, Ifjúság útja 20.)

### Előadó:

Dr. Michal Ciborowski: Metabolomics in the clinical settings.

Az előadás nyelve: angol.

Minden érdeklődőt szeretettel várunk!

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Michał Ciborowski, PhD coordinates the mass spectrometry facility at the Clinical Research Centre (CRC) of the Medical University of Białystok (MUB). His research interest is oriented on applications of metabolomics to biomedical and clinical research. He was working for two years (2009 and 2010) at the Centre for Metabolomics and Bioanalysis (CEMBIO) in Madrid under supervision of Prof. Coral Barbas. During this period he got significant knowledge and experience regarding liquid chromatography and mass spectrometry with its particular application to metabolomics research. In 2012 he joined the newly created CRC of MUB and his responsibility was to create a mass spectrometry facility. At the moment his facility is equipped with three LC-MS systems: nLC-orbitrap Fusion (Thermo Scientific), LC-QQQ-MS with RapidFire SPE-on-line system (Agilent Technologies) and LC-QTOF-MS (Agilent Technologies).

Considering clinical problems, his main research is focused on diabetology (diabetes, obesity, nutrition), oncology and cardiovascular disease. He is interested in methods development and identification of metabolites by MS/MS fragmentation. Currently his group is composed of 6 people (two post-docs, two technicians, and two PhD students).

A list of his recent papers related to metabolomics research:

- 1: Daniluk U, Daniluk J, Kucharski R, Kowalczyk T, Pietrowska K, Samczuk P, Filimoniuk A, Kretowski A, Lebensztejn D, Ciborowski M. Untargeted Metabolomics and Inflammatory Markers Profiling in Children With Crohn's Disease and Ulcerative Colitis-A Preliminary Study. *Inflamm Bowel Dis*. 2019 Feb 17. doi: 10.1093/ibd/izy402.
- 2: Samczuk P, Hady HR, Adamska-Patruno E, Citko A, Dadan J, Barbas C, Kretowski A, Ciborowski M. In-and-Out Molecular Changes Linked to the Type 2 Diabetes Remission after Bariatric Surgery: An Influence of Gut Microbes on Mitochondria Metabolism. *Int J Mol Sci*. 2018 Nov 24;19(12). doi: 10.3390/ijms19123744.
- 3: Gil de la Fuente A, Traldi F, Siroka J, Kretowski A, Ciborowski M, Otero A, Barbas C, Godzien J. Characterization and annotation of oxidized glycerophosphocholines for non-targeted metabolomics with LC-QTOF-MS data. *Anal Chim Acta*. 2018 Dec 11;1037:358-368. doi: 10.1016/j.aca.2018.08.005.
- 4: Parfieniuk E, Zbucka-Kretowska M, Ciborowski M, Kretowski A, Barbas C. Untargeted metabolomics: an overview of its usefulness and future potential in prenatal diagnosis. *Expert Rev Proteomics*. 2018 Oct;15(10):809-816. doi:10.1080/14789450.2018.1526678.
- 5: Parfieniuk E, Samczuk P, Kowalczyk T, Pietrowska K, Niemira M, Paczkowska-Abdulsalam M, Wolczynski S, Kretowski A, Ciborowski M, Zbucka-Kretowska M. Maternal plasma metabolic fingerprint indicative for fetal Down syndrome. *Prenat Diagn*. 2018 Oct;38(11):876-882. doi: 10.1002/pd.5345.
- 6: Pietrowska K, Dmuchowska DA, Krasnicki P, Mariak Z, Kretowski A, Ciborowski M. Analysis of pharmaceuticals and small molecules in aqueous humor. *J Pharm Biomed Anal*. 2018 Sep 10;159:23- 36. doi: 10.1016/j.jpba.2018.06.049.
- 7: Samczuk P, Ciborowski M, Kretowski A. Application of Metabolomics to Study Effects of Bariatric Surgery. *J Diabetes Res*. 2018 Mar 11;2018:6270875. doi:10.1155/2018/6270875.

- 8: Zbucka-Kretowska M, Zbucki R, Parfieniuk E, Maslyk M, Lazarek U, Miltyk W, Czerniecki J, Wolczynski S, Kretowski A, Ciborowski M. Evaluation of Bisphenol A influence on endocannabinoid system in pregnant women. *Chemosphere*. 2018 Jul;203:387-392. doi: 10.1016/j.chemosphere.2018.03.195.
- 9: Marcinkiewicz-Siemion M, Ciborowski M, Ptaszynska-Kopczynska K, Szpakowicz A, Lisowska A, Jasiewicz M, Waszkiewicz E, Kretowski A, Musial WJ, Kaminski KA. LC-MS-based serum fingerprinting reveals significant dysregulation of phospholipids in chronic heart failure. *J Pharm Biomed Anal*. 2018 May 30;154:354-363. doi: 10.1016/j.jpba.2018.03.027.
- 10: Samczuk P, Luba M, Godzien J, Mastrangelo A, Hady HR, Dadan J, Barbas C, Gorska M, Kretowski A, Ciborowski M. "Gear mechanism" of bariatric interventions revealed by untargeted metabolomics. *J Pharm Biomed Anal*. 2018 Mar 20;151:219-226. doi: 10.1016/j.jpba.2018.01.016.
- 11: Pietrowska K, Dmuchowska DA, Krasnicki P, Bujalska A, Samczuk P, Parfieniuk E, Kowalczyk T, Wojnar M, Mariak Z, Kretowski A, Ciborowski M. An exploratory LC-MS-based metabolomics study reveals differences in aqueous humor composition between diabetic and non-diabetic patients with cataract. *Electrophoresis*. 2018 May;39(9-10):1233-1240. doi: 10.1002/elps.201700411.
- 12: Zmyslowska A, Ciborowski M, Borowiec M, Fendler W, Pietrowska K, Parfieniuk E, Antosik K, Pyziak A, Waszczykowska A, Kretowski A, Mlynarski W. Serum Metabolic Fingerprinting Identified Putatively Annotated Sphinganine Isomer as a Biomarker of Wolfram Syndrome. *J Proteome Res*. 2017 Nov 3;16(11):4000-4008. doi: 10.1021/acs.jproteome.7b00401.
- 13: Niklinski J, Kretowski A, Moniuszko M, Reszec J, Michalska-Falkowska A, Niemira M, Ciborowski M, Charkiewicz R, Jurgilewicz D, Kozlowski M, Ramlau R, Piwkowski C, Kwasniewski M, Kaczmarek M, Ciereszko A, Wasniewski T, Mroz R, Naumnik W, Sierko E, Paczkowska M, Kisluk J, Sulewska A, Cybulski A, Mariak Z, Kedra B, Szamatowicz J, Kurzawa P, Minarowski L, Charkiewicz AE, Mroczo B, Malyszko J, Manegold C, Pilz L, Allgayer H, Abba ML, Juhl H, Koch F; MOBIT Study Group. Systematic biobanking, novel imaging techniques, and advanced molecular analysis for precise tumor diagnosis and therapy: The Polish MOBIT project. *Adv Med Sci*. 2017 Sep;62(2):405-413. doi: 10.1016/j.advms.2017.05.002.
- 14: Ciborowski M, Kisluk J, Pietrowska K, Samczuk P, Parfieniuk E, Kowalczyk T, Kozlowski M, Kretowski A, Niklinski J. Development of LC-QTOF-MS method for human lung tissue fingerprinting. A preliminary application to nonsmall cell lung cancer. *Electrophoresis*. 2017 Sep;38(18):2304-2312. doi: 10.1002/elps.201700022.
- 15: Pietrowska K, Dmuchowska DA, Samczuk P, Kowalczyk T, Krasnicki P, Wojnar M, Skowronska A, Mariak Z, Kretowski A, Ciborowski M. LC-MS-Based Metabolic Fingerprinting of Aqueous Humor. *J Anal Methods Chem*. 2017;2017:6745932. doi: 10.1155/2017/6745932.