

# KATEŘINA HOŇKOVÁ

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## CURRENT AFFILIATION

2013 - NOW

**Ing. Jan Topinka, Ph.D., DSc.**

Dpt. of Genetic Toxicology and Epigenetics, Institute of Experimental Medicine CAS,  
Videnska 1083, 142 00 Prague, Czechia

## WORK EXPERIENCE

2013 - NOW

**Research assistant**

Dpt. of Genetic Toxicology and Epigenetics, Institute of Experimental Medicine CAS,  
Prague

## EDUCATION

2013 - NOW

**Ph.D. in Biomedicine – Molecular and Cell Biology, Genetics and Virology**

Faculty of Science, Charles University in Prague, Czechia

2011 - 2013

**MSc. in Specialist in Public Health Protection**

Faculty of Medicine, University of Ostrava, Czechia

2008 - 2011

**Bachelor in Public Health Protection**

Faculty of Medicine, University of Ostrava, Czechia

## EXPERTISE AND RESEARCH PROFILE

**Biomedicine:** Air pollution, biomarkers, epigenetics, genetic toxicology; molecular epidemiology; molecular-biological methods, microarray, NGS, analysis of gene expression; R programming

**Astronomy and astrophysics:** Variable stars (eclipsing binaries, pulsating stars), transits of exoplanets, photometry, observations, data processing

## PARTICIPATION IN SCIENTIFIC PROJECTS

- 2019 – 2023  
**TUBE - Transport derived Ultrafines and the Brain Effects**, H2020 RIA - MOBILITY FOR GROWTH (814978)
- 2020 – 2022  
**ADAIR - From air pollution to brain pollution – novel biomarkers to unravel the link of air pollution and Alzheimer’s disease**, Ministry of Education, Youth and Sports, The EU Joint Programme – Neurodegenerative Disease Research (8F20008)
- 2018 – 2022  
**HAIE - Healthy Aging in Industrial Environment**, European Union - European Structural and Investment Funds, Operational Program Research, Development and Education; Ministry of Education, Youth and Sports (CZ.02.1.01/0.0/0.0/16\_019/0000798)
- 2018 – 2020  
**NANOEX - The effect of nanoparticles exposure on DNA alterations in a human population**, Czech Science Foundation (18-02079S)
- 2016 – 2021  
**Wellbeing in Health and Disease**, Strategy AV21
- 2013 – 2016  
**Impact of air pollution to genome of newborns**, Czech Science Foundation (13-13458S)

## COURSES

- **Statistical and epidemiological issues in human biomonitoring studies**: Cost Action hCOMET (2018), IRCCS San Raffaele Pisana, Rome, Italy
- **Statistical Data Analysis for Genome-Scale Biology (CSAMA)**: EMBL, Heidelberg (2018), University of Padova, Brixen, Italy
- **Progress in Molecular Biology and Genetic Course** (2015) Institute of Molecular Genetics AS CR, Prague, Czechia
- **Fundamentals of Scientific work** (2015) Academy of Sciences, Prague, Czechia
- **Course of quantitative PCR and RT-PCR** (2014) SEQme, Prague, Czechia
- **Practical course of microarray techniques** (2013) Institute of Hematology and Blood Transfusion, 1 st Faculty of Medicine, Charles University, Prague, Czechia

## PUBLICATIONS – BIOMEDICINE

- Sima, M., Vrbova, K., Zavodna, T., **Honkova, K.**, Chvojkova, I., Ambroz, A., Klema, J., Rossnerova, A., Polakova, K., Malina, T., Belza, J., Topinka, J., Rossner, P., Jr. The Differential Effect of Carbon Dots on Gene Expression and DNA Methylation of Human Embryonic Lung Fibroblasts as a Function of Surface Charge and Dose. *International Journal of Molecular Sciences*. **2020**, 21 (13), 4763. <https://doi.org/10.3390/ijms21134763>. **IF 4.55**
- Rossnerova, A., **Honkova, K.**, Pelclova, D., Zdimal, V., Hubacek, H. A., Chvojkova I., Vrbova, K. et al. DNA Methylation Profiles in a Group of Workers Occupationally Exposed to Nanoparticles. *International Journal of Molecular Sciences*. **2020**, 21 (7). <https://doi.org/10.3390/ijms21072420>. **IF 4.55**
- Blazkova, B., Pastorkova, A., Solansky, I., Veleminsky, M. Jr, Veleminsky, M., Rossnerova, A., **Honkova, K.**, Rossner Jr, P., Sram, R. J. The Impact of Cesarean and Vaginal Delivery on Results of Psychological Cognitive Test in 5 Year Old Children. *Medicina (Kaunas)*. **2020**, 56(10), 554. <https://doi.org/10.3390/medicina56100554>. **IF 1.20**
- **Honkova, K.**, Rossnerova, A., Pavlikova, J., Svecova, V., Klema, J., Topinka, J., Milcova, A. et al. Gene Expression Profiling in Healthy Newborns from Diverse Localities of the Czech Republic. *Environmental and Molecular Mutagenesis*. **2018**, 59 (5), 401–15. <https://doi.org/10.1002/em.22184>. **IF 3.13**
- Ghosh, R., Rossner, P., **Honkova, K.**, Dostal, M., Sram, R. J., Hertz-Picciotto I. Air Pollution and Childhood Bronchitis: Interaction with Xenobiotic, Immune Regulatory and DNA Repair Genes. *Environment International*. **2016**, 87, 94–100. <https://doi.org/10.1016/j.envint.2015.10.002>. **IF 7.57**
- Rossnerova, A., **Honkova K.**, Pavlikova, J., Skalicka Z., Havrankova Z., Solansky, I., Rossner, P., Sram R. J. and Zölzer F. Mapping the factors affecting the frequency and types of micronuclei in an elderly population from Southern Bohemia. *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis*. **2016**, 793–794. <https://doi.org/10.1016/j.mrfmmm.2016.10.004>. **IF 2.01**
- Rossner, P., Tulupova, E., Rossnerova, A., Libalova, H., Honkova, K., Gmuender, H. Pastorkova, A. Svecova, V., Topinka, J. Sram, R. J. Reduced Gene Expression Levels after Chronic Exposure to High Concentrations of Air Pollutants. *Mutation Research*. **2015**, 780, 60–70. <https://doi.org/10.1016/j.mrfmmm.2015.08.001>. **IF 2.50**

## PUBLICATIONS – ASTROPHYSICS

- Wolf, M., Kučáková, H., Zasche, P., Vraštil, J. **Hoňková, K.**, Hornoch, K., Lehký, M., Mašek, M., Šmelcer, L., Tylšar, M., Novák, R., Červinka L., and Bělík M. Possible substellar companions in low-mass eclipsing binaries: GU Bootis and YY Geminorum. *Astronomy & Astrophysics*. **2018**, 620, A72. <https://doi.org/10.1051/0004-6361/201833708>. **IF 5.64**
- Zasche, P., Wolf, M., Uhlař, R., Cagaš, P., Juryšek, J., Mašek, M., **Hoňková, K.**, Kučáková, H. Lehký, M., Kotková, L. White, G. J., Bewsher, D., Tylšar, M., Jelínek, M., Paschke, A. The first study of 54 new eccentric eclipsing binaries in our Galaxy. *Astronomy & Astrophysics*. **2018**, 619, A85. <http://doi.org/10.1051/0004-6361/201832793>. **IF 5.64**
- Paunzen, E. Handler, G., **Hoňková, K.**, Juryšek, J., Mašek M., Drózdž, M., Janík, J., Ogłóza, W., Hermansson, L., Johansson, M., Jelínek, M., Skarka, M. and Zejda, M. The search for roAp stars: null results and new candidates from Strömgren-Crawford photometry. *Research in Astronomy and Astrophysics*. **2018**, 18, 11, 135. <http://doi.org/10.1088/1674-4527/18/11/135>. **IF 1.51**
- Šmelcer, L. Wolf, M., Kučáková, H., Bílek, F., Dubovský, P. **Hoňková, K.**, Vraštil, J. Flare activity on low-mass eclipsing binary GJ 3236, *Monthly Notices of the Royal Astronomical Society*. **2017**, 466, 3, 2542–2546. <https://doi.org/10.1093/mnras/stw3179>. **IF 5.36**
- Zasche, P., Juryšek J., Nemravová J., Uhlař R., Svoboda, P., Wolf, M., **Hoňková, K.**, Mašek M., Prouza M., Čechura J., Korčáková, D., Šlechta, M. V773 Cas, QS Aql, and BR Ind: Eclipsing Binaries as Parts of Multiple Systems. *The Astronomical Journal*. **2017**, 153(1), 36, 9. <http://doi.org/10.3847/1538-3881/153/1/36>. **IF 5.49**
- Korda, D., Zasche, P., Wolf, M., Kučáková, H., **Hoňková, K.**, and Vraštil, J. Photometric Study of Fourteen Low-mass Binaries. *The Astronomical Journal*. **2017**, 154, 1. <http://doi.org/doi:10.3847/1538-3881/aa7138>. **IF 5.49**
- Mayer, P., Harmanec, P., Wolf, M., Nemravová, J., Prsa, A., Fremat, Y., Zejda, M., Liska, J., Juryšek, J., **Hoňková, K.**, Mašek, M. V346 Centauri: Early-type eclipsing binary with apsidal motion and abrupt change of orbital period. *Astronomy & Astrophysics*. **2016**, 591, 129, 9. <http://doi.org/10.1051/0004-6361/201628655>. **IF 5.64**

## ATTENDANCE AT CONFERENCES

- 2019
  - 15th International Congress of Toxicology (ICTXV)**, Honolulu, Hawaii, USA  
**Poster:** Methylation profiles in newborns from diverse air polluted localities in the Czech Republic
  - Genetic Toxicology and Cancer Prevention (ČSSMZP)**, Smolenice, Slovakia  
**Talk:** Methylation profiles in newborns from diverse air polluted localities in the Czech Republic (in Czech)
  - 34th Congress of Occupational Medicine (ČLS JEP)**, Mariánské Lázně, Czechia  
**Talk:** Global and genome-wide DNA methylation profiles in a group of workers occupationally exposed to nanoparticles (in Czech)
  - Silesian Days of Preventive Medicine (KHS Ostrava)**, Ostravice, Czechia  
**Talk:** Genové a epigenetické změny u novorozenců narozených v lokalitách České republiky s různou úrovní znečištění ovzduší (in Czech)
- 2018
  - Environmental Mutagenesis Genomics Society meeting (EMGS)**, San Antonio, TX, USA  
**Talk:** "Gene expression and epigenetic changes in healthy newborns from different localities in the Czech Republic"
- 2017
  - Environmental Mutagenesis Genomics Society meeting (EMGS)**, Raleigh, NC, USA  
**Talk:** Prenatal exposure of air pollution can affect immune and neurotrophin pathways in healthy newborns
  - 12th International Conference and 5th Asian Congress on Environmental Mutagens (ICEM/ACEM)**, Incheon, South Korea  
**Talk:** Gene Expression Profile in Newborns from Localities with Different Level of Air Pollution
- 2016
  - ENBIK – National bioinformatical conference (VŠCHT)**, Loučeň, Czechia  
**Poster:** Analýza genové exprese u novorozenců narozených v prostředí s odlišnou úrovní znečištění ovzduší (in Czech)
  - Central and Eastern European Conference on Health and the Environment (CEECH),** Prague, Czechia  
**Poster:** The effect of prenatal exposure of air pollution to modulation of gene expression preliminary results of G-NEW study
  - The 8th International Network on Children's Health, Environment and Safety (INCHES)**, Barcelona, Spain  
**Talk:** Impact of air pollution to oxidative damage in newborns  
**Poster:** Personal exposure to PM2.5 and benzo[a]pyrene in Ostrava

Enviromental Mutagenesis Genomics Society meeting (EMGS), Kansas City, Missouri, USA

**Poster:** Analysis of gene expression profile in newborns from districts with different levels of Air pollution

- 2014

Genetic Toxicology and Cancer Prevention (ČSSMZP), Brno, Czechia

**Talk:** miRNA ve výzkumu genetické toxikologie (in Czech)