Balázs Vajna

1. Personal information

- Name: Vajna Balázs
- Place and Date of Birth: Budapest, 29th August 1979
- Citizenship: Hungarian
- Working address: ELTE, Department of Microbiology
  Pázmány Péter stny. 1/C; Budapest; Hungary 1117
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2. Education

- 1998-2004 – Biology MSc at the Eötvös Loránd University, Faculty of Science
  Title of the MSc thesis: Detection of family Desulfovibrionaceae with classical and molecular tools from reed rhizosphere of Lake Velencei
- 2004-2007 – PhD studies at the Eötvös Loránd University
  December 2010 – thesis defence with *summa cum laude* grade
  Title of the PhD thesis: Characterization of bacterial community changes during oyster mushroom substrate preparation using molecular methods – The optimization and applicability of the T-RFLP data processing

3. Employment history

- December 2007 – May 2012 – Research assistant at the Department of Microbiology, Eötvös Loránd University
- From June 2012 – Assistant lecturer at the Department of Microbiology, Eötvös Loránd University
- From January 2015 – Assistant professor at the Department of Microbiology, Eötvös Loránd University

4. Language skills

- good working knowledge of both written and spoken English and German

5. Study abroad

- April-June 2003 – Erasmus scholarship in Kuopio, Finland
  Topic: Detection of enteroviruses with the help of coliphages in drinking and waste waters
- November 2011 – Laboratory of Environmental Microbiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic
  Topic: Measuring activities of lignocellulose degrading enzymes
- March-July 2013 – Joint FEMS-ESCMID Research Fellowship, IAM Nancy-INRA, France
  Topic: Exploring the role of bacterial communities on lignocellulose degrading activities and sporocarp formation of *Pleurotus ostreatus* in a mushroom production model system

6. Awards

- 2007: FEMS Young Scientist Meeting Grant – Zadar, Power of Microbes

7. Membership

- From 2003 member in the Hungarian Society of Microbiology

8. Teaching activities

- Holding lectures and practical courses at the Department of Microbiology

- Supervision of 2 PhD student, 5 successful MSc thesis and 6 successful BSc thesis

9. Research areas

- Detection of the family Desulfovibrionaceae with classical and molecular methods from reed rhizosphere in lake Velencei (during MSc studies)
- Characterization of bacterial community changes during oyster mushroom substrate preparation using molecular methods – The optimization and applicability of the T-RFLP data processing (during PhD studies)
- Bacterium – fungus interactions during growth substrate colonisation and fruiting body formation of oyster mushroom (*Pleurotus ostreatus*): succession of bacterial community composition (16S rDNA based T-RFLP and NGS) and oyster mushroom lignocellulose degrading activity
- Effect of mycotoxins on the cultivation of button and oyster mushroom, role of microbiota of possible mycotoxin degradation
- Effect of local climate change (multiannual extreme drought and rain manipulations) on fungal diversity in a sandy grassland
- Other areas:
    - Analysis of button mushroom compost with near infrared spectroscopy (NIR)
    - Monitoring industrial waste water systems with molecular microbiological methods
    - Monitoring bacterial communities during biogas production

10. Summary of publication activity

- Cumulative impact factor: 57.25
- Total independent citations: 187
- H-index: 10
- Researcher ID: F-7855-2011
- MTMT (Hungarian Scientific Bibliography): https://m2.mtmt.hu/gui2/?type=authors&mode=browse&sel=10020452
- Orcid: https://orcid.org/0000-0002-5604-7997
- Google Scholar

11. List of Publications

Kovács GG, László L, Bakos A, Minarovits J, Bishop M, Ströbel T, Mitrova E, Vajna B, Majtényi K. 2005. Increased incidence of genetic human prion disease in Hungary. Neurology 65, 1666-1669.

Mezei M, Balog K, Babic DZ, Toth G, Cech G, Vajna B, Tauber T, Seme K, Tomazic J, Vidmar L, Poljak M, Minarovits J. 2006. Genetic variability of *gag* and *env* regions of HIV-1 strains circulating in Slovenia. AIDS Research and Human Retroviruses 22, 109-113.

Borsodi AK, Makk J, Rusznyák A, Vajna B, Taba Gy, Márialigeti K. 2007. Phenotypic characterization and molecular taxonomic studies on *Bacillus* and related isolates from reed (*Phragmites australis*) periphyton. Aquatic Botany 86, 243-252.

Székely AJ, Sipos R, Berta B, Vajna B, Hajdú C, Márialigeti K. 2009. DGGE and T-RFLP Analysis of Bacterial Succession during Mushroom Compost Production and Sequence-aided T-RFLP Profile of Mature Compost. Microbial Ecology 57, 522-33.

Vajna B, Nagy A, Sajben E, Manczinger L, Szijártó N, Kádár Zs, Bordás D, Márialigeti K. 2010. Microbial community structure changes during oyster mushroom substrate preparation. Applied Microbiology Biotechnology 86, 367-375.

Borsodi AK, Kiss RI, Cech G, Vajna B, Tóth EM, Márialigeti K. 2010. Diversity and Activity of Cultivable Aerobic Planktonic Bacteria of a Saline Lake Located in Sovata, Romania. Folia Microbiologica 55, 461-466.

Felföldi T, Duleba M, Somogyi B, Vajna B, Nikolausz M, Présing M, Márialigeti K, Vörös L. 2011. Diversity and seasonal dynamics of the photoautotrophic picoplankton in Lake Balaton (Hungary). Aquat. Microb. Ecol. 63: 273-287.

Vajna B, Kanizsai Sz, Kéki Zs, Márialigeti K, Schumann P, Tóth EM. 2012. *Thermus composti* sp. nov., isolated from oyster mushroom compost. Int. J. Syst. Evol. Micr. 62, 1486-1490 doi:10.1099/ijs.0.030866-0

Gombos E, Felföldi T, Barkács K, Vértes C, Vajna B, Záray G. 2012. Ferrate treatment for inactivation of bacterial community in municipal secondary effluent. Bioresour. Technol. 107: 116-121. DOI: 10.1016/j.biortech.2011.12.053

Vajna B, Szili D, Nagy A, Márialigeti K. 2012. An improved sequence aided T-RFLP analysis of bacterial succession during oyster mushroom substrate preparation. Microbial Ecology, 64, 702–713.

Benedek T, Vajna B, Táncsics A, Márialigeti K, Lányi Sz, Máthé I. 2013. Remarkable impact of PAHs and TPHs on the richness and diversity of bacterial species in surface soils exposed to long-term hydrocarbon pollution. World J. Microbiol. Biotechnol. 29, 1989-2002.

Táncsics A, Farkas M, Szoboszlay S, Szabó I, Kukolya J, Vajna B, Kovács B, Kriszt B. 2013. One-year monitoring of meta-cleavage dioxygenase gene expression and microbial community dynamics reveals the relevance of subfamily I.2.C extradiol dioxygenases in hypoxic, BTEX-contaminated groundwater. Systematic and Applied Microbiology 36, 339-350.

Felföldi T, Jurecska L, Vajna B, Barkács K, Makk J, Cebe G, Szabó A, Záray Gy, Márialigeti K. 2015. Texture and type of polymer fiber carrier determine bacterial colonization and biofilm properties in wastewater treatment. Chemical Engineering Journal 264, 824-834.

Bánfi R, Pohner Zs, Kovács J, Luzics Sz, Nagy A, Dudás M, Tanos P, Márialigeti K, Vajna B. 2015. Characterisation of the large-scale production process of oyster mushroom (*Pleurotus ostreatus*) with the analysis of succession and spatial heterogeneity of lignocellulolytic enzyme activities. Fungal Biology. 119, 1354-1363. doi:10.1016/j.funbio.2015.10.003

Mentes A, Szabó A, Somogyi B, Vajna B, Tugyi N, Csitári B, Vörös L, Felföldi T. 2018. Differences in planktonic microbial communities associated with three types of macrophyte stands in a shallow lake. FEMS Microbiology Ecology. 94, fix164, https://doi.org/10.1093/femsec/fix164

Deveau A, Bonito G, Uehling J, Paoletti M, Becker M, Bindschedler S, Hacquard S, Herve V, Labbe J, Lastovetsky OA, Mieszkin S, Millet LJ, Vajna B, Junier P, Bonfante P, Krom BP, Olsson S, van Elsas JD, Wick LY. 2018. Bacterial-fungal interactions: ecology, mechanisms and challenges. FEMS Microbiology Reviews. 42, 335-352. doi: 10.1093/femsre/fuy008

Kari A, Nagymáté Zs, Romsics Cs, Vajna B, Kutasi J, Puspán I, Kárpáti E, Kovács R, Márialigeti K. 2019 Monitoring of soil microbial inoculants and their impact on maize (*Zea mays* L.) rhizosphere using T-RFLP molecular fingerprint method. Applied Soil Ecolology. 138, 233-244. doi: 10.1016/j.apsoil.2019.03.010

Keki Zs, Makk J, Barkács K, Vajna B, Palatinszky M, Márialigeti K, Tóth E. 2019. Critical point analysis and biocide treatment in a microbiologically contaminated water purification system of a power plant. Springer Nature Applied Sciences. 1:820 doi: 10.1007/s42452-019-0740-9

Mayer Z, Sasvári Z, Szentpéteri V, Pethőné Rétháti B, Vajna B, Posta K. Effect of Long-Term Cropping Systems on the Diversity of the Soil Bacterial Communities. Agronomy 2019, 9, 878. doi: https://doi.org/10.3390/agronomy9120878

Abbaszade G, Szabó A, Vajna B. et al. Whole genome sequence analysis of *Cupriavidus campinensis* S14E4C, a heavy metal resistant bacterium. Mol Biol Rep (2020). https://doi.org/10.1007/s11033-020-05490-8

Ujszegi J, Vajna B, Móricz ÁM. et al. Relationships Between Chemical Defenses of Common Toad (*Bufo bufo*) Tadpoles and Bacterial Community Structure of their Natural Aquatic Habitat. J Chem Ecol (2020). 46, 534–543 https://doi.org/10.1007/s10886-020-01184-4

Budapest, 2nd of September 2020

Balázs Vajna