

CURRICULUM VITAE

Rolandas Meškys

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EDUCATION

1988 Faculty of Chemistry, Vilnius University, Master in Chemistry (Biochemistry)

1998 Doctoral degree in Biochemistry, PhD thesis "Screening and analysis of microbial hydrogen peroxide-producing oxidases"

POSITIONS

1988–1992 Junior scientist, Institute of Biochemistry, Vilnius, Lithuania.

1993–1998 PhD studies, Institute of Biochemistry and Vilnius University, Vilnius, Lithuania.

1998–1999 Researcher, Institute of Biochemistry, Vilnius, Lithuania.

1999–2002 Senior Research Associate, Institute of Biochemistry, Vilnius, Lithuania.

From 2002 Head of Department of Molecular Microbiology and Biotechnology, Institute of Biochemistry, (from 2016 in the Life Science Center, Vilnius University), Vilnius, Lithuania.

From 2018 Distinguished Professor, Institute of Biochemistry, Life Science Center, Vilnius University.

EXPERT ACTIVITIES

2009 National Integrated Programme "Biotechnology and biopharmaceutical development: Professional development and research and development activities, creating conditions for foreign investment and the dynamic of the household sector turnover growth". Program Development Group Member.

2010 Lithuanian Ministry of Economy of Industrial Biotechnology Development in Lithuania 2011-2013 year program (Industrial Biotechnology Development 2011-2013 was approved by the Minister of Economy in 2010. 12 October. ORDER NO. 4-764). Program Development Group Member.

2002 evaluator of the proposals/projects of the 5th Framework Research Programme.
2002–2009 evaluator of the proposals/projects of the Programmes at the Lithuanian State Science and Studies Foundation.
2002–2006 evaluator of the proposals/projects of the 6th Framework Research Programme.
2007, 2011, 2012 expert of the Finnish Academy projects.
From 2004 expert of the Research Council of Lithuania.
2007–2011 evaluator of the proposals/projects of the 7th Framework Research Programme.
2014–2017 evaluator of the proposals of the Horizon2020 Programme.
2013, 2016–2017, 2020–2021 expertise on the proposals of Lithuanian Business Support Agency.

RESEARCH INTERESTS

Biochemical and genetic diversity of microorganisms, biocatalysis, biosensors, enzyme biotechnology, bacteriophages

TEACHING EXPERIENCE

Theoretical courses

1996–2013 Metabolic Processes in Microorganisms. Vilnius University
1997–2018 Biotechnology. Special Biotechnology. Vytautas Magnus University, Kaunas.
2002–2022 Biotechnology. Vilnius University
2012–2023 Molecular Mechanisms of Symbiosis. Vilnius University
2023 Synthetic Biology and Metabolic Engineering. Vilnius University

The supervisor of 19 PhD students (14 defended/completed and 5 ongoing)

GRANTS (from 2012)

Selected national grants:

2011–2012 Pyridines and Pyrazines: Biodegradation and Biocatalytic Synthesis. No. MIP-076/2011. Project leader.
2012–2014 “Development of screening and application of Baeyer-Villiger monooxygenases (OXYMORON)“, No. MIP-042/2012. Project leader.
2013–2015 Change or die: redesign of oxidoreductases (CHORD). European Social Fund (ESF) under the Human Resources Development Action Programme, the Global Grant measure, project No. VP1-3.1-ŠMM-07-K-03-015. Project leader.
2018–2021 Biocatalytic systems for conversion of non-starch poli- and oligosaccharides. Project leader dr. M. Dagys. The European Regional Development Fund according to the supported activity ‘Research Projects Implemented by World-class Researcher Groups’ under Measure No. 01.2.2-LMT-K-718. Dr. R. Meškys is PI for development of biocatalysts.
2020–2023 Selective enzymatic system for prodrug activation. Research Council of Lithuania (No. 01.2.2-LMT-K-718-03-0082), project leader.

2020–2023 Center for engineering of the next-generation enzymes. Central Project Management Agency. (No. 01.2.2-CPVA-K-703-03-0023), project leader.

International grants:

2005–2009 Partner of 6FP IP project “New Technologies to Screen Multiple Chemical Contaminants in Foods (BioCop)”, contract No. FOOD-CT-2004-06988.
2005–2009 Partner of 6FP STREP project “Fast Advanced Cellular and Ecosystems Information Technologies, (FACEIT)”, contract No. 018391 GOCE.
2015–2019 Partner of Horizon2020 project “Industrial Applications of Marine Enzymes: Innovative screening and expression platforms to discover and use the functional protein diversity from the sea (INMARE)”, contract No 634486.

Grants supported by industry:

2010–2012 Development of stable producer of citric acid, AB Amilina. Lithuania
2012–2013 Screening of oxygenases in pre-enriched gene libraries, Bayer Technology Service GmbH, Germany.
2013–2015 Metagenomic gene libraries and screening for decarboxylases, Bayer MaterialScience AG, Germany.
2015–2017 Analysis of biodistribution of the recombinant therapeutic proteins and their aggregates, Baxalta Innovations (Shire), Austria.
2017–2018 Development of method for removal of gliadin peptides from the protein mixtures, AB Roquette Amilina, Lithuania.
2020 Detection of metabolites in yeast cultures. UAB Neurostrain, Lithuania,
2021-2023 Identification of biocatalysts using in vivo and in vitro screening, UAB Biomatter Designs, Lithuania.

ACADEMIC AWARDS AND PRIZES

2009 Lithuanian Science Award (in the field of biocatalysis, together with collaborators)
2011, 2019 Vilnius University Rector's Prize for the best scientist of the year.
2017, 2018 Vilnius University Rector's Prize for the best applied research.
2017, 2020 Grand Prize winner (as PI of the iGEM team of Vilnius University) at the International Genetically Engineered Machine competition, Boston, USA.

OTHER ACTIVITIES

Co-founder of Biomatter Designs Co Ltd. – a company dealing with a data-driven engineering of proteins.

PUBLICATIONS, PATENT APPLICATIONS AND PATENTS

Scientific publications >160 (WoS)

PUBLICATIONS (2012–2023):

1. Stanislauskienė R., Gasparaviciute R., Vaitekunas J., Meskiene R., Rutkiene R., Casaitė V., Meskys R. Construction of Escherichia coli-Arthrobacter-Rhodococcus shuttle vectors based on a cryptic plasmid from Arthrobacter rhombi and investigation of their application for functional screening. FEMS Microbiol. Lett. 2012 327: 78–86.
2. Bukauskas V., Šetkus A., Šimkienė I., Tumėnas S., Kašalynas I., Rėza A., Babonas J., Časaitė V., Povilonienė S., Meškys R. Solid surface dependent layering of self-arranged structures with fibril-like assemblies of alpha-synuclein. Appl Surf Sci 2012 258: 4383–4390.

3. Misiūnas A., Niaura G., Barauskas J., Meškys R., Rutkienė R., Razumas V., Nylander T. Horse heart cytochrome c entrapped into the liquid-crystalline phases of aqueous phytantriol: X-ray diffraction and Raman spectroscopic characterization. *J. Colloid Interface. Sci.* 2012 378: 232–240.
4. Šimoliūnas E., Kaliniene L., Truncaite L., Klausas V., Zajančauskaite A., Meškys R. Genome of *Klebsiella* sp. infecting bacteriophage vB_KleM_RaK2. *J. Virol.* 2012 86: 5406.
5. Truncaite L., Šimoliūnas E., Zajančauskaite A., Kaliniene L., Mankevičiūtė R., Staniulis J., Klausas V., Meškys R. Bacteriophage vB_EcoM_FV3: a new member of “rV5-like viruses”. *Arch. Virol.* 2012 157(12): 2431-2435.
6. Šimoliūnas E., Kaliniene L., Truncaite L., Zajančauskaitė A., Staniulis J., Kaupinis A., Ger M., Valius M., Meškys R. *Klebsiella* phage vB_KleM-RaK2 - a giant singleton virus of the family Myoviridae. *PLOS One* 2013 8(4): e60717
7. Kutanovas S., Stankevičiute J., Urbelis G., Tauraitė D., Rutkienė R., Meskys R. Identification and characterization of tetramethylpyrazine catabolic pathway in *Rhodococcus jostii* TMP1. *Appl. Environ. Microbiol.* 2013 79: 3649–3657.
8. Karvelis L., Gasparavičiūtė R., Klimavičius A., Jančienė R., Stankevičiūtė J., Meškys R. *Pusillimonas* sp. 5HP degrading 5-hydroxypicolinic acid. *Biodegradation* 2014 25: 11-19.
9. Strazdaitė-Žielienė Ž., Zajančauskaitė A., Kaliniene L., Meškys R., Truncaite L. A mutation in the gene for polynucleotide kinase of bacteriophage T4K10 affects mRNA processing. *Arch. Virol.* 2014 159: 327–331.
10. Tetianec L., Chaleckaja A., Vidziunaite R., Kulys J., Bachmatova I., Marcinkeviciene L., Meskys R. Development the laccase/syringaldazine system for NAD(P)H oxidation. *J. Mol. Catal. B: Enzym.* 2014 101: 28–34.
11. Urbonavičius J., Meškys R., Grosjean H. Biosynthesis of wyosine derivatives in tRNAPhe of Archaea: role of a remarkable bifunctional tRNAPhe:m1G/imG2 methyltransferase. *RNA* 2014 20:747–753.
12. Dagys M., Lamberg P., Shleev S., Niaura G., Bachmatova I., Marcinkeviciene L., Meskys R., Kulys J., Arnebrant T., Ruzgas T. Comparison of bioelectrocatalysis at *Trichaptum abietinum* and *Trametes hirsuta* laccase modified electrodes. *Electrochimica Acta* 2014 130: 141–147.
13. Šimoliūnas E., Kaliniene L., Stasilo M., Truncaite L., Zajančauskaitė A., Staniulis J., Nainys J., Kaupinis A., Valius M., Meškys R. Isolation and characterization of vB_ArS-ArV2 – first *Arthobacter* sp. infecting bacteriophage with completely sequenced genome. *PLoS One* 2014 9(10): e111230.
14. Sulcius, S.; Simoliunas, E.; Staniulis, J.; Koreiviene, J.; Baltrusis, P.; Meskys, R.; Paskauskas, R. Characterization of a lytic cyanophage that infects the bloom-forming cyanobacterium *Aphanizomenon flos-aquae*. *FEMS Microbiol. Ecol.* 2015 91: 1–7.
15. Ivanec-Goranina R., Kulys J., Bachmatova I., Marcinkevičienė L., Meškys R. Laccase-catalyzed bisphenol A oxidation in presence of 10-propyl sulfonic acid phenoxazine. *J. Environ. Sci.* 2015 30: 135-139.
16. Povilonienė S., Časaitė V., Bukauskas V., Šetkus A., Staniulis J., Meškys R. Functionalization of alpha-synuclein fibrils. *Beilstein J. Nanotech.* 2015, 6: 124–133.
17. Kaliniene L., Zajančauskaitė A., Šimoliūnas E., Truncaite L., Meškys R. Low-temperature bacterial viruses VR – a small but diverse group of *E. coli* phages. *Arch. Virol.* 2015 160:1367-1370.
18. Ratautas D., Marcinkeviciene J., Meskys R., Kulys J. Mediatorless electron transfer in glucose dehydrogenase/laccase system adsorbed on carbon nanotubes. *Electrochim. Acta* 2015 174: 940-944.
19. Sneideris T., Baranauskienė L., Cannon J.G., Rutkienė R., Meskys R., Smirnovas V. Looking for a generic inhibitor of amyloid-like fibril formation among flavone derivatives. *PeerJ* 2015 3:e1271
20. Stankevičiūtė J., Kutanovas S., Rutkienė R., Ražanas R., Tauraitė D., Striela R., Meškys R. Ketoreductase TpdE from *Rhodococcus jostii* TMP1: characterization and application in the synthesis of chiral alcohols. *PeerJ* 2015 3:e1387.
21. Šimoliūnas E., Vilkaitytė M., Kaliniene L., Zajančauskaitė A., Kaupinis A., Staniulis J., Valius M., Meškys R., Truncaite L. Incomplete LPS core-specific Felix01likevirus vB_EcoM_VpaE1. *Viruses-Basel* 2015 7(12), 6163-6181.
22. Kasiliauskaitė A., Časaitė V., Juozapaitienė V., Zubrienė A., Michailovienė V., Revuckienė J., Baranauskienė L., Meškys R., Matulis D. Thermodynamic characterization of human carbonic anhydrase VB stability and intrinsic binding of compounds. *J Therm Anal Calorim* 2016 123: 2191-2200.
23. Šimkus R., Meškienė R., Ledas Ž., Baronas R., Meškys R. Microtiter plate tests for segregation of bioluminescent bacteria. *Luminescence* 2016 31: 127–134.
24. Tauraitė D., Ražanas R., Mikalkėnas A., Serva S., Meškys R. Synthesis of pyridone-based nucleoside analogues as substrates or inhibitors of DNA polymerases. *Nucleos. Nucleot. Nucl.* 2016 35: 163-177.

25. Vaitekūnas J., Gasparavičiūtė R., Rutkienė R., Tauraitė D., Meškys R. A 2-hydroxypyridine catabolism pathway in *Rhodococcus rhodochrous* strain PY11. *Appl. Environ. Microbiol.* 2016 82: 1264–1273.
26. Ratautas D., Laurynėnas A., Dagys M., Marcinkevičienė L., Meškys R., Kulys J. High current, low redox potential mediatorless bioanode based on gold nanoparticles and glucose dehydrogenase from *Ewingella americana*. *Electrochim. Acta* 2016 199: 254-260.
27. Stankevičiūtė J., Vaitekūnas J., Petkevičius V., Gasparavičiūtė R., Tauraitė D., Meškys R. Oxyfunctionalization of pyridine derivatives using whole cells of *Burkholderia* sp. MAK1. *Sci. Rep.* 2016 6:39129.
28. Urbonavičius J., Rutkienė R., Lopato A., Tauraitė D., Stankevičiūtė J., Aučynaitė A., Kaliniene L., van Tilbeurgh H., Meškys R. Evolution of tRNAPhe:imG2 methyltransferases involved in the biosynthesis of wyosine derivatives in Archaea. *RNA* 2016 22: 1871-1883.
29. Dagys M., Laurynėnas A., Ratautas D., Kulys J., Vidžiūnaitė R., Talaikis M., Niaura G., Marcinkevičienė L., Meškys R., Shleev S. Oxygen electroreduction catalyzed by laccase wired to gold nanoparticle via trinuclear copper cluster. *Energy Environ. Sci.* 2017, 10, 498–502.
30. Tetianec L., Chaleckaja A., Kulys J., Janciene R., Marcinkeviciene L., Meskiene R., Stankevičiute J., Meškys R. Characterization of methylated azopyridine as a potential electron transfer mediator for electroenzymatic systems. *Process Biochem.* 2017 54, 41–48.
31. Kaliniene L., Šimoliūnas E., Truncaitė L., Zajančauskaitė A., Nainys J., Kaupinis A., Valius M., Meškys R. Molecular analysis of *Arthrobacter myovirus* vB_ArtM-ArV1: we blame it on the tail. *J. Virol.* 2017 91: e00023-17.
32. Tauraitė D., Jakubovska J., Dabužinskaitė J., Bratchikov M., Meškys R. Modified nucleotides as substrates of terminal deoxynucleotidyl transferase. *Molecules* 2017 22(4), 672.
33. Alijošius L., Šimoliūnas E., Kaliniene L., Meškys R., Truncaitė L. Complete genome sequence of *Escherichia coli* phage vB_EcoM_Alf5. *Genome Announc.* 2017 5:e00315-17
34. Ratautas D., Tetianec L., Marcinkevičienė L., Meškys R., Kulys J. Bioanode with alcohol dehydrogenase undergoing a direct electron transfer on functionalized gold nanoparticles for an application in biofuel cells for glycerol conversion. *Biosensors Bioelectronics* 2017 98: 215–221.
35. Sadauskas M., Vaitekūnas J., Gasparavičiūtė R., Meškys R. Indole biodegradation in *Acinetobacter* sp. strain O153: genetic and biochemical characterization. *Appl. Environ. Microbiol.* 2017 83 (19): e01453-17.
36. Kaliniene L., Truncaitė L., Šimoliūnas E., Zajančauskaite A., Vilkaitytė M., Kaupinis A., Skapas M., Meškys R. Molecular analysis of the low-temperature *Escherichia coli* phage vB_EcoS_NBD2. *Arch. Virol.* 2018 163: 105–114. <https://doi.org/10.1007/s00705-017-3589-5>.
37. Aučynaitė A., Rutkienė R., Gasparavičiūtė R., Meškys R., Urbonavičius J. A gene encoding a DUF523 domain protein is involved in the conversion of 2-thiouracil into uracil. *Environ. Microbiol. Rep.* 2018 10(1): 49–56.
38. Ratautas D., Ramonas E., Marcinkevičienė L., Meškys R., Kulys J. Wiring gold nanoparticles and redox enzymes: a self-sufficient nanocatalyst for oxidation of carbohydrates directly with the molecular oxygen. *ChemCatChem* 2018 10, 1–5.
39. Mikalkėnas A., Ravoitytė B., Tauraitė D., Servienė E., Meškys R., Serva S. Conjugation of phosphonoacetic acid to nucleobase promotes a mechanism-based inhibition. *J. Enzym. Inhib. Med. Chem.* 2018 33: 384–389.
40. Petkevičius V., Vaitekūnas J., Stankevičiūtė J., Gasparavičiūtė R., Meškys R. Catabolism of 2-hydroxypyridine by *Burkholderia* sp. MAK1: a five-gene cluster encoded 2-hydroxypyridine 5-monooxygenase HpdABCDE catalyses the first step of biodegradation. *Appl. Environ. Microbiol.* 2018 84:e00387-18.
41. Šimkus R., Meškienė R., Aučynaitė A., Ledas Ž., Baronas R., Meškys R. Phoretic interactions and oscillations in active suspensions of growing *Escherichia coli*. *R. Soc. Open Sci.* 2018 5: 180008.
42. Jakubovska J., Tauraitė D., Birštonas L., Meškys R. N4-acyl-2'-deoxycytidine-5'-triphosphates for the enzymatic synthesis of modified DNA. *Nucleic Acids Res.* 2018 46: 5911–5923.
43. Stanislauskienė R., Kutanovas S., Kalinienė L., Bratchikov M., Meškys R. Tetramethylpyrazine-inducible promoter region from *Rhodococcus jostii* TMP1. *Molecules* 2018 23(7), 1530.
44. Aučynaitė A., Rutkienė R., Tauraitė D., Meškys R., Urbonavičius J. Discovery of bacterial deaminases that convert 5-fluoroisocytosine into 5-fluorouracil. *Front. Microbiol.* 2018, 9: 2375.
45. Šulčius S., Šimoliūnas E., Alzbutas G., Gasiūnas G., Jauniškis V., Kuznecova J., Sini S., Nilsson E., Meškys R., Roine E., Paškauskas R., Holmfeldt K. Genomic characterisation of cyanophage vB_AphaS-CL131 infecting filamentous diazotrophic cyanobacteria

- Aphanizomenon flos-aquae reveals novel insights into virus-bacterium interactions. *Appl. Environ. Microbiol.* 2018 85:e01311-18.
46. Krikštaponis A., Meškys R. Biodegradation of 7-hydroxycoumarin in *Pseudomonas mandelii* 7HK4 via ipso-hydroxylation of 3-(2,4-dihydroxyphenyl)-propionic acid. *Molecules* 2018, 23, 2613.
 47. Šimoliūnas E., Šimoliūnienė M., Kaliniene L., Zajančauskaitė A., Skapas M., Meškys R., Kaupinis A., Valius M., Truncaitė L. Pantoea bacteriophage vB_PagS_Vid5: a low-temperature siphovirus that harbors a cluster of genes involved in the biosynthesis of archaeosine. *Viruses* 2018, 10: 583.
 48. Jakubovska J., Tauraitė D., Meškys R. A versatile method for the UVA-induced cross-linking of acetophenone- or benzophenone-functionalized DNA. *Sci. Rep.* 2018 8: 16484.
 49. Aučynaitė, A.; Rutkienė, R.; Tauraitė, D.; Meškys, R.; Urbonavičius, J. Identification of a 2'-O-methyluridine nucleoside hydrolase using the metagenomic libraries. *Molecules* 2018, 23, 2904.
 50. Šulčius S., Šimoliūnas E., Alzbutas G., Gasiūnas G., Jauniškis V., Kuznecova J., Sini S., Nilsson E., Meskys R., Roine E., Paškauskas R., Holmfeldt K. Genomic characterisation of cyanophage vB_AphaS-CL131 infecting filamentous diazotrophic cyanobacteria Aphanizomenon flos-aquae reveals novel insights into virus-bacterium interactions. *Appl. Environ. Microbiol.* 2019 85:e01311-18.
 51. Urbelienė N., Kutanovas S., Meškienė R., Gasparavičiūtė R., Tauraitė D., Koplūnaitė M., Meškys R. Application of the uridine auxotrophic host and synthetic nucleosides for a rapid selection of hydrolases from metagenomic libraries. *Microb. Biotechnol.* 2019, 12: 148–160.
 52. Manuel Ferrer, Celia Méndez-García, Rafael Bargiela, Jennifer Chow, Sandra Alonso, Antonio García-Moyano, Gro E.K. Bjerga, Ida H. Steen, Tatjana Schwabe, Charlotte Blom, Jan Vester, Andrea Weckbecker, Patrick Shahgaldian, Carla C.C.R. de Carvalho, Rolandas Meskys, Giulio Zanaroli, Frank O. Glöckner, Antonio Fernández-Guerra, Siva Thambisetty, Fernando de la Calle, Olga V. Golyshina, Michail M. Yakimov, Karl Erich Jaeger, Alexander F. Yakunin, Wolfgang R. Streit, Oonagh McMeel, Jan Bart Calewaer, Nathalie Tonné, Peter N. Golyshin, The INMARE Consortium. Decoding the ocean's microbiological secrets for marine enzyme biodiscovery. *FEMS Microbiol. Lett.* 2019 366: 1 DOI: 10.1093/femsle/fny285
 53. Časaitė V., Sadauskas M., Vaitekūnas J., Gasparavičiūtė R., Meškienė R., Skikaitė I., Sakalauskas I., Jakubovska J., Tauraitė D., Meškys R. Engineering of a chromogenic enzyme screening system based on an auxiliary indole-3-carboxylic acid monooxygenase. *MicrobiologyOpen* 2019 e795.
 54. Šimoliūnas, E.; Truncaitė, L.; Rutkienė, R.; Povilonienė, S.; Goda, K.; Kaupinis, A.; Valius, M.; Meškys, R. The robust self-assembling tubular nanostructures formed by gp053 from phage vB_EcoM_FV3. *Viruses* 2019, 11, 50.
 55. Petkevičius V.; Vaitekūnas J.; Tauraitė D.; Stankevičiūtė J.; Šarlauskas J.; Čėnas N.; Meškys R. A biocatalytic synthesis of heteroaromatic N-oxides by whole cells of *Escherichia coli* expressing the multicomponent, soluble di-iron monooxygenase (SDIMO) PmlABCDEF. *Adv. Synth. Catal.* 2019 361: 2456-2465.
 56. Krikstolaityte V., Hamit-Eminovski J., Abariute L., Niaura G., Meskys R., Arnebrant T., Lisak G., Ruzgas T. Impact of molecular linker size on physicochemical properties of assembled gold nanoparticle mono-/multi-layers and their applicability for functional binding of biomolecules. *J. Colloid Interface Sci.* 2019 543: 307–316.
 57. Špakova A., Šimoliūnas E., Batiuškaitė R., Pajeda S., Meškys R., Petraitytė-Burneikienė R. Self-assembly of tail tube protein of bacteriophage vB_EcoS_NBD2 into extremely long polytubes in *E. coli* and *S. cerevisiae*. *Viruses* 2019, 11, 208.
 58. Kazlauskas A., Darinskas A., Meškys R., Tamašauskas A., Urbonavičius J. Isocytosine deaminase Vcz as a novel tool for the prodrug cancer therapy. *BMC Cancer* 2019 19: 197.
 59. Petkevičius V., Vaitekūnas J., Vaitkus D., Čėnas N., Meškys R. Tailoring a soluble diiron monooxygenase for synthesis of aromatic N-oxides. *Catalyst* 2019 9(4), 356.
 60. Ramonas E., Ratautas D., Dagys M., Meškys R., Kulys J. Highly sensitive amperometric biosensor based on alcohol dehydrogenase for determination of glycerol in human urine, *Talanta* 2019 200: 333–339.
 61. Jakubovska J., Tauraitė D., Meškys R. Transient N4-acyl-DNA protection against the cleavage by restriction endonucleases. *ChemBioChem* 2019 20: 1–10.
 62. Gineitytė J., Dagys M., Meškys R., Ratautas D. Highly efficient direct electron transfer bioanode containing glucose dehydrogenase operating in human blood. *J. Power Sources* 2019, 441: 227163.
 63. Vaitkutė G., Bratkovskaja I., Časaitė V., Stankevičiūtė J., Meškys R., Tetianec L. Electron transfer mediators for PQQ dependent soluble glucose dehydrogenase catalyzed lactose oxidation reaction. *Chemija* 2019 30: 194–200.
 64. Repecka D., Jauniskis V., Karpus L., Rembeza E., Zrimec J., Poviloniene S., Rokaitis I., Laurynenas A., Abuajwa W., Savolainen O., Meskys R., Engqvist M.K.M., Zelezniak A.

- Expanding functional protein sequence space using generative adversarial networks. *bioRxiv* **2019** 789719.
65. Sadauskas M., Statkevičiūtė R., Vaitekūnas J., Petkevičius V., Časaitė V., Gasparavičiūtė R., Meškys R. Enzymatic synthesis of novel water-soluble indigoid compounds. *Dyes Pigm.* **2020** 173: 107882.
 66. Gružauskaitė J., Jasinskaitė J., Meškys R., Gaidamavičienė G., Žalga A., Laurynėnas A., Tetianec L., Dagys M. Gold-coated magnetic nanocatalyst containing wired oxidoreductases for mediatorless catalysis of carbohydrate oxidation by oxygen. *Catal. Commun.* **2020** 135: 105848.
 67. Stanislauskienė R., Laurynėnas A., Rutkienė R., Aučynaitė A., Tauraitė D., Meškienė R., Urbelienė N., Kaupinis A., Valius M., Kaliniene L., Meškys R. YqfB protein from *Escherichia coli*: an atypical amidohydrolase active towards *N*⁴-acylcytosine derivatives. *Sci. Rep.* **2020** 10, 788.
 68. Šimoliūnienė M., Tumėnas D., Kvederavičiūtė K., Meškys R., Šulčius S., Šimoliūnas E. Complete genome sequence of *Bacillus cereus* bacteriophage vB_BceS_KLEB30-3S. *Microbiol. Resour. Announc.* **2020** 9: e00348-20.
 69. Sadauskas M.; Statkevičiūtė R.; Vaitekūnas J.; Meškys R. Bioconversion of biologically active indole derivatives with indole-3-acetic acid-degrading enzymes from *Caballeronia glathei* DSM50014. *Biomolecules* **2020**, 10, 663.
 70. Urbelienė N.; Meškienė R.; Tiškus M.; Stanislauskienė R.; Aučynaitė A.; Laurynėnas A.; Meškys R. A rapid method for the selection of amidohydrolases from metagenomic libraries by applying synthetic nucleosides and a uridine auxotrophic host. *Catalysts* **2020**, 10: 445.
 71. Šimoliūnienė M.; Truncaitė L.; Petrauskaitė E.; Zajančauskaitė A.; Meškys R.; Skapas M.; Kaupinis A.; Valius M.; Šimoliūnas E. *Pantoea agglomerans*-infecting bacteriophage vB_PagS_AAS21: A cold-adapted virus representing a novel genus within the family Siphoviridae. *Viruses* **2020**, 12, 479.
 72. Ramašauskas L., Meškys R., Ratautas, D. Real-time glucose monitoring system containing enzymatic sensor and enzymatic reference electrodes. *Biosens. Bioelectron.* **2020**, 164: 112338.
 73. Časaitė V., Stanislauskienė R., Vaitekūnas J., Tauraitė D., Rutkienė R., Gasparavičiūtė R., Meškys R. Microbial degradation of pyridine: a complete pathway deciphered in *Arthrobacter* sp. 68b. *Appl. Environ. Microbiol.* **2020**, 86: e00902-20.
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