Curriculum vitae

Name and family name	**AUDRIUS GEGECKAS**
Date of birth	1987-11-19
Scientific degree and titles	Doctor, Lecturer, Assistant professor, Researcher

Higher education		
University	Year of graduation	Qualification obtained
Vilnius University	**2012**	**Microbiologist**
Vilnius University	**2010**	**Biologist**

Postgraduate studies			
University	Title	Year of graduation	Qualification obtained
Vilnius University	**Characterization and application of keratinolytic peptidases from *Geobacillus* sp. and *Bacillus* spp.**	**2012 - 2016**	**Doctor (Biomedical sciences, biology (01B)**

Work experience		
Year (from/to)	Workplace	Position
From 2019-09 to 2020-09	**Faculty of Marine Technology and Natural Sciences, Klaipeda University**	Associate professor
From 2017-02 to present	**JSC Bioenergy LT**	Head of R&D
From 2017-09 to present	**Department of Microbiology and Biotechnology, Vilnius University**	Assistant professor
From 2017-09 to 2019-09	**Faculty of Marine Technology and Natural Sciences, Klaipeda University**	Lecturer
From 2016-11 to 2017-02	**Institute of Biotechnology, Vilnius University**	Research Fellow
From 2016-07 to 2016-11	**Institute of Biotechnology, Vilnius University**	Junior Research Fellow
From 2013-09 to 2017-09	**Department of Microbiology and Biotechnology, Vilnius University**	Lecturer
From 2014-05 to 2014-12	**Department of Microbiology and Biotechnology, Vilnius University**	Senior Scientific Specialist
From 2011-02 to 2013-12	**Department of Microbiology and Biotechnology, Vilnius University**	Specialist
From 2009-01 to 2010-05	**UAB Fermentas (now UAB Thermo Fisher Scientific Baltics)**	Trainee

Scientific and teaching activities	
Scientific interests	Teaching activity (courses offered)
Biotechnology, molecular biology, gene engineering, proteomics, synthetic biology	Biotechnology for Molecular biology (5 ECTS), Genetics (5 ECTS), Biochemistry (5 ECTS) and Biophysics (4 ECTS) undergraduates, 48 hours; Biotechnology for Microbiology and Biotechnology undergraduates (10 ECTS), 64 hours
Microbiology, molecular microbiology	Microbiology for Biochemistry (5 ECTS) and Molecular biology (6 ECTS) undergraduates, 32 and 64 hours, respectively.
Microbiology	Microbiology labaratory course for Biochemistry undergraduates, 32 hours.
Food microbiology and biotechnology	Prepared courses: Food microbiology; The methods for studying microorganisms.

Language skills					
MOTHER TONGUE: LITHUANIAN **FOREIGN LANGUAGES:** 5 – excellent, 4 – good, 3 – average, 2 – satisfactory, 1 – basic					
Language	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
English	**5**	**5**	**5**	**5**	**5**
Russian	**4**	**4**	**3**	**3**	**3**

The most significant publications

1. Juodkazyte J., Petrulevičienė M., Parvin M., Šebeka B., Savickaja I., Pakštas V., Naujokaitis A., Virkutis J., **Gegeckas A**. Activity of sol-gel derived nanocrystalline WO_3 films in photoelectrochemical generation of reactive chlorine species. *J. Electroanal. Chem*. 2020:871;
2. Druteika G., Sadauskas M., Malunavicius V., Lastauskiene E., Taujenis L., **Gegeckas A**., Gudiukaite R. Development of a new Geobacillus lipase variant GDlip43 via directed evolution leading to identification of new activity-regulating amino acids. *Int. J. Biol. Macromol*. 2020:151, 1194-1204;
3. Gudiukaite R., Malunavicius V., Szczesniak A., Sadauskas M., Druteika G., Blekaitis K., **Gegeckas A**., Lastauskiene E. *Geobacillus* sp. 95 as a source of enzymes with special characteristics: Characterization of thermostable lipases, esterases, ureases and nitrate reductases. *New Biotechnol*. 2018:44, S157;
4. Malunavicius V., Druteika G., Sadauskas M., Veteikyte A., Matijosyte I., Lastauskiene E., **Gegeckas A**., Gudiukaite R. Usage of GD-95 and GD-66 lipases as fusion partners leading to improve chimeric enzyme LipGD55-GD66. *Int. J. Biol. Macromol*. 2018:118, 1594-1603;
5. **Gegeckas A**., Šimkutė A., Gudiukaitė R., Citavicius D. Characterization and application of keratinolytic peptidases from Bacillus spp. *Int. J. Biol. Macromol*. 2018:113, 1206-1213;
6. Gudiukaitė R., Sadauskas M., **Gegeckas A**., Malunavicius V., Citavicius D. Construction of a novel lipolytic fusion biocatalyst GDEst-lip for industrial application. *J. Ind. Microbiol. Biotechnol*, 2017;
7. Gudiukaitė R., **Gegeckas A**., Sadauskas M., Citavicius D. Detection of Asp371, Phe375, and Tyr376 influence on GD-95-10 lipase using alanine scanning mutagenesis. *Appl. Biochem. Biotechnol*, 2016:178(4), 654-669;
8. **Gegeckas A**., Gudiukaitė R., Debski J., Citavicius D. Keratinous waste decomposition and peptide production by keratinase from *Geobacillus stearothermophilus* AD-11. *Int. J. Biol. Macromol*. 2015:75, 158-165;
9. **Gegeckas A**., Gudiukaitė R., Citavicius D. Keratinolytic proteinase from Bacillus thuringiensis AD-12. *Int. J. Biol. Macromol*. 2014:69, 46-51;
10. Gudiukaitė R., **Gegeckas A**., Kazlauskas D., Citavicius D. Influence of N- and/or C-terminal regions on activity, expression, characteristics and structure of lipase from *Geobacillus* sp. 95. *Extremophiles*, 2014:18(1), 131-45;

The most significant presentations at conferences

1. Juodviršytė I., Kaziūnienė J., Gegeckas A. Isolation and characterization of cellulases producing microorganisms from biogas digestate. 64th International conference for students of physics and natural sciences, 16-19 March 2021, Vilnius, Lithuania;
2. Kaziūnienė J., Mažylytė R., Gegeckas A. Isolation and screening of diazotrophic microorganisms which are significant for sustainable agriculture. 64th International conference for students of physics and natural sciences, 16-19 March 2021, Vilnius, Lithuania
3. Mažylytė R., Kaziūnienė J., Lastauskienė E., Gegeckas A. Isolation of phosphate solubilizing microorganism and industrial fermentation process optimization. 64th International conference for students of physics and natural sciences, 16-19 March 2021, Vilnius, Lithuania;
4. Mažylytė R., Smeledytė J., Gegeckas A. Isolation and identification of plant growth promoting rhizobacteria from soil and their effect on plant growth promotion and disease suppression. 4th

Biostimulant world congress 2019, 18-21 November 2019, Barcelona, Spain;

5. Dudėnas M., Mažylytė R., Smeledyte J., Gegeckas A. Microbial phosphorus mineralization and its potential for use in sustainable agriculture. 4th Biostimulant world congress 2019, 18-21 November 2019, Barcelona, Spain;
6. Gegeckas A., Gudiukaitė R., Virkutis J., Lastauskienė E. Sustainable management of keratin waste using synthetic fused keratinolytic peptidase SynKer-TT. FEMS2019 8th Congress of European Microbiologists, 07-11 July 2019. Glasgow, Scotland;
7. Mažylytė R., Smeledytė J., Virkutis J., Gegeckas A. Effect of microbial consortium on destruction of agricultural plants residues. FEMS2019 8th Congress of European Microbiologists, 07-11 July 2019. Glasgow, Scotland;
8. Malūnavičius V., Maneikis A., Gegeckas A., Lastauskienė E., Gudiukaitė R. Analysis into the possible biomineralisation using Staphylococcus sp. H6 and Arthrobacter sp. G7 strains. The COINS International conference of Life sciences 2019, 26 February – 28 February. Vilnius, Lithuania. 1st place in poster presentation session of The COINS 2019;
9. Gudiukaite R., Malunavicius V., Szczesniak A., Sadauskas M., Druteika G., Blekaitis K., Gegeckas A., Lastauskiene E. Geobacillus sp. 95 as a source of enzymes with special characteristics: characterization of thermostable lipases, esterases, ureases and nitrate reductases. 18th European Congress of Biotechnology ECB2018, 1-4 July, 2018, Geneva, Switzerland;
10. Druteika G., Gegeckas A., Lastauskienė E., Gudiukaitė R. The impact of E100K, F154V and V174I mutations on the tertiary structure and catalytic activity of GD-95 lipase. COINS International conference of Life sciences 2018, 28 February – 2 March. Vilnius, Lithuania;
11. Druteika G., Lastauskiene E., Gegeckas A., Gudiukaite R. Functional and structural analysis of new GD-95 lipase variant created through random mutagenesis. Vita Scientia 2018, 03 January 2018. Vilnius, Lithuania;
12. Gegeckas A., Šimkutė A., Gudiukaitė R., Čitavičius D. Keratinolytic peptidases from *Bacillus* spp. with promising peptide-production activity. The 17th International Biodeterioration and Biodegradation Symposium, 6-8 September 2017, Manchester, UK;
13. Gudiukaite R., Sadauskas M., Malunavicius V., Gegeckas A., Citavicius D. Directed evolution of *Geobacillus* lipases leading to production of new biocatalyst with improved properties.13th International symposium on Biocatalysis and Biotransformations BioTrans 2017, Budapest, Hungary, 2017 07 9-13;
14. Gegeckas A., Šimkutė A., Gudiukaitė R., Čitavičius D. Synthetic homodimer SynKer-TT for efficient biodegradation of proteinaceous materials. CBM2016 3rd Congress of Baltic Microbiologists, 18-21 October 2016. Vilnius, Lithuania;
15. Malūnavičius V., Gudiukaitė R., Gegeckas A., Čitavičius D. Design and analysis of new fused lipolytic biocatalyst LIPGD95-GD66. CBM2016 3rd Congress of Baltic Microbiologists, 18-21 October 2014. Vilnius, Lithuania;
16. Gegeckas A., Simkute A., Gudiukaite R., Citavicius DJ. Keratin waste biodegradation and peptide production by keratinolytic proteinase from Bacillus methylotrophicus AD-AA3. VAAM 2015 Annual Conference of the Association for General and Applied Microbiology, 13-16 March 2016. Jena, Germany;
17. Simkute A., Gegeckas A., Gudiukaite R., Citavicius DJ. Keratinolytic proteinase from *Bacillus pumilus* AD-W with promising keratin waste biodegradation activity. Vita Scientia 2016, 04 January 2016. Vilnius, Lithuania;
18. Malunavicius V., Gudiukaite R., Gegeckas A, Citavicius DJ. Construction of new chimeric lipase using protein engineering methods. Vita Scientia 2016, 04 January 2016. Vilnius, Lithuania;
19. Gegeckas A., Gudiukaite R., Simkute A., Citavicius DJ. Keratinoliziniu aktyvumu pasižymintys fermentai: įvairovė ir biotechnologinis potencialas. 2015 m. Jaunųjų mokslininkų konferencijos BIOATEITIS: gamtos ir gyvybės mokslų perspektyvos, 10 December 2015. Vilnius, Lithuania;
20. Gegeckas A., Simkute A., Gudiukaite R., Citavicius DJ. Keratinolytic proteinase from *Bacillus pumilus* AD-W with promising peptide-production activity. BioMicroWorld 2015 6th International Conference on Environmental, Industrial and Applied Microbiology, 28-30 October 2015. Barcelona, Spain;
21. Gegeckas A., Gudiukaite R., Citavicius DJ. Synthetic homodimer of GEOker keratinase for

efficient biodegradation of keratin by-products. BioMicroWorld 2015 6th International Conference on Environmental, Industrial and Applied Microbiology, 28-30 October 2015. Barcelona, Spain;

22. Gudiukaite R., Gegeckas A., Malunavicius V., Citavicius D. Functionality analysis of structural domains from GD-95 lipase by site specific and random mutagenesis. FEMS2015 6th Congress of European Microbiologists, 07-11 June 2015. Maastricht, The Netherlands;
23. Gegeckas A., Gudiukaite R., Čitavičius D. Keratinolytic proteinase as a powerful biocatalyst for bio-active peptide production. CBM2014 2nd Congress of Baltic Microbiologists, 16-19 October 2014. Tartu, Estonia;
24. Gudiukaite R., Gegeckas A., Čitavičius D. GD-95 lipase - new biocatalyst in wide industry areas. CBM2014 2nd Congress of Baltic Microbiologists, 16-19 October 2014. Tartu, Estonia;
25. Gudiukaite R., Gegeckas A., Citavicius D. *Geobacillus* spp. kamienų rekombinantinių lipazių fizikinių bei cheminių savybių įvairovės įvertinimas. Mokslas Gamtos Mokslų fakultete, 8th mokslinė konferencija, 3 October 2014. Vilnius, Lithuania;
26. Gegeckas A., Gudiukaitė R., Čitavičius D. Production, purification and partial characterization of keratinolytic serine peptidase from newly isolated *Bacillus* sp. K1-2 strain. FEMS2013 5th Congress of European Microbiologists, 20-25 July 2013. Leipzig, Germany;
27. Gudiukaitė R., Gegeckas A., Čitavičius D. Cloning, purification and esterification capability determination of lipase produced by *Geobacillus* sp. 76. FEMS2013 5th Congress of European Microbiologists, 20-25 July 20113, Leipzig, Germany.

Most important projects during the last 10 years: title, funding institution, duration, budget, activity

1. The European Social Fund under the No 09.3.3-LMT-K-712 "Development of Competences of Scientists, other Researchers and Students through Practical Research Activities" measure, Grant No. 09.3.3-LMT-K-712-25-0130, Project "Development of a fibrillar protein degradation system to obtain biologically active peptides"; 2021 09 01 – 2022 03 31; Funding: 2.655.26 Eur, head of the project;
2. The European Social Fund under the No 01.2.1-MITA-T-851 "Inočekiai", Grant No. 01.2.1-MITA-T-851-02-0280, Project "Recycling of organic wastes with a high concentration of structural carbohydrates into biogas by biochemical methods"; 2021-05-14 – 2023-05-12; Funding: 46826.00 Eur, head of the project (one part);
3. The European Social Fund under the No 09.3.3-LMT-K-712 "Development of Competences of Scientists, other Researchers and Students through Practical Research Activities" measure, Grant No. 09.3.3-LMT-K-712-22-0172, Project "Synergistic effect of essential oils and pulsed electric field on [PSI] prion in Saccharomyces cerevisiae cells"; 2020 11 03 – 2021 04 30; Funding: 2.999.15 Eur, head of the project;
4. The European Social Fund under the No 09.3.3-LMT-K-712 "Development of Competences of Scientists, other Researchers and Students through Practical Research Activities" measure, Grant No. 09.3.3-LMT-K-712-15-0102, Project "Analysis of synergistic activity of keratinolytic enzymes"; 2019 07 01 – 2019 08 31; Funding: 1877.93 Eur, head of the project;
5. The European Social Fund under the No 01.2.1-MITA-T-851 "Inočekiai", Grant No. 01.2.1-MITA-T-851-01-0029, Project "Innovative application of selective biopreparations for the conversion of raw materials into biogas"; 2018-12-01 – 2020-12-01; Funding: 12801.00 Eur, head of the project (one part);
6. The European Social Fund under the No 09.3.3-LMT-K-712 "Development of Competences of Scientists, other Researchers and Students through Practical Research Activities" measure, Grant No. 09.3.3.-LMT-K-712-10-0030, Project "The research of application of native and recombinant of Gram-positive bacteria produced ureases in biomineralization and agriculture"; 2018 10 01 – 2019 04 30; Funding: 2839.05 Eur, head of the project;
7. The European Social Fund under the No 09.3.3-LMT-K-712 "Development of Competences of Scientists, other Researchers and Students through Practical Research Activities" measure, Grant No. 09.3.3.-LMT-K-712-09-0090, Project "The research of Geobacillus ureases in native and heterologous systems"; 2018 07 02 -2018 08 31; Funding: 1877.93 Eur, head of the project;

8. National Science festival "Spaceship Earth". Science festival is being supported financially by the EU Structural funds. This project is part of a bigger effort – Creation of the National Science Popularization System, coordinated by the Lithuanian Academy of Sciences; 09.3.3-ESFA-V-711-02-0001, 2014-2020; researcher
9. Project of Lithuanian centre of non-formal youth education, Government of the Republic of Lithuania and Lithuanian centre of non-formal youth education funded project, 2015, consultant;
10. "Scientific Research and Experimental Development (SRED) Incentive Program", The Lithuanian Agency for Science, Innovation and Technology, 2014, senior scientific specialist;
11. Project of Lithuanian centre of non-formal youth education - stage II", EU SF and Government of the Republic of Lithuania funded project, 2012-2015, 5,77 million EUR, scientific consultant
12. Industrial biotechnology development programme for Lithuania for 2011-2013 project "Development of completely novel approach for the cosmetics (COSMETIZYM)", The Lithuanian Agency for Science, Innovation and Technology, 2011-2013, MITA 31V-18 120 000 EUR, specialist.

Membership

1. Lithuanian FEMS delegate;
2. Member of the Lithuanian Microbiology Society board;
3. Member of Lithuanian Biochemical Society;
4. Member of Lithuanian Biotechnology Association;
5. Member of Microbiology and Biotechnology master study program committee.

Organisational and managerial skills

Organizing scientific conferences:

- Member of organizing committee of International Microorganism Day 2018, 2019, 2020 and 2021;
- In 2016 I was co-chairman of organizing committee of 3rd Congress of Baltic Microbiologists (CBM2016).

Personal and group manager:

- I was supervisor of two master and seven bachelor students;
- Member of Microbiology master study programme self-assessment board;
- Supervisor of eight independent scientific research groups (2-4 members per group).

Long-term projects:

- Member of Microbiology and Biotechnology master study program committee;
- Member of Lithuanian Microbiology Society board.

Other activity:

- Human practices of project (iGEM, Vilnius, 2017; 2018).

Scholarships

- Grant for participation in "VAAM 2016", Supported by Research Council of Lithuania, 2016;
- Grant for participation in "BioMicroWorld 2015", Supported by Research Council of Lithuania, 2015;
- Doctoral scholarship for academic achievements. Supported by Research Council of Lithuania, 2014, 2015 and 2016;