

Сведения о научном руководителе диссертации

Асланлы Айсель Гюльхан кызы

«Полифункциональные препараты на основе His₆-ОРН для гидролиза фосфорорганических соединений и ацилгомосеринлактонов»

Научный руководитель: Ефременко Елена Николаевна

Ученая степень: доктор биологических наук

Шифр и наименование специальности: 03.01.06 – «биотехнология (в том числе бионанотехнологии)»

Ученое звание: профессор

Должность: заведующая лабораторией

Место работы: Химический факультет Федерального государственного бюджетного образовательного учреждения высшего образования "Московский государственный университет имени М.В. Ломоносова", лаборатория экобиокатализа.

Адрес места работы: 119991, г. Москва, Ленинские горы, д.1, стр.11.

Тел.: +7(495)939-31-70

E-mail: elena_efremenko@list.ru

Список основных научных публикаций по специальности 03.01.06 – «биотехнология (в том числе бионанотехнология)» за последние 5 лет:

1. Aslanli A., Stepanov N., Razheva T., Podorozhko E.A., Lyagin I., Lozinsky V.I., Efremenko E. Enzymatically functionalized composite materials based on nanocellulose and poly(vinyl alcohol) cryogel and possessing antimicrobial activity, *Materials*, 2019, 12(21), 3619.
2. Aslanli A., Lyagin I., Efremenko E. Charges' interaction in polyelectrolyte (nano)complexing of His₆-OPH with peptides: unpredictable results due to imperfect or useless concept? *Int. J. Biol. Macromol.*, 2019, 140, 368–376.
3. Efremenko E.N., Lyagin I.V. Advanced biocatalysts based on hexahistidine-containing organophosphorus hydrolase for chemical and biological defense, *Вестник войск РХБ защиты*, 2019, 3(2), 111–116.
4. Lyagin I., Efremenko E. Enzymes for Detoxification of Various Mycotoxins: Origins and Mechanisms of Catalytic Action, *Molecules*, 2019, 24(13), 2362.
5. Lyagin I., Efremenko E. Theoretical evaluation of suspected enzymatic hydrolysis of Novichok agents, *Catal. Commun.*, 2019, 120, 91-94.
6. Senko O., Gladchenko M., Maslova O., Efremenko E. Long-term storage and use of artificially immobilized anaerobic sludge as a powerful biocatalyst for conversion of various wastes including those containing xenobiotics to biogas. *Catalysts*, 2019, 9(4), 326.
7. Efremenko E., Ahundov R., Aslanli A., Lyagin I., Senko O., Maslova O., Stepanov N. Development of functional materials with specific activities for degradation of toxins, *IOP Conference Series: Materials Science and Engineering*, 2019, 525, 012016.
8. Aslanli A.G., Stepanov N.A., Senko O.V., Maslova O.V., Lyagin I.V., Efremenko E.N. The hexahistidine containing organophosphorus hydrolase enzyme and bacterial cellulose based

- functional materials, IOP Conference Series: Materials Science and Engineering, 2019, 525, 012005.
9. Maslova O. V., Aslanli A. G., Senko O. V., Efremenko E. N. The possibilities of reducing the minimal inhibitory concentration of puromycin and ceftiofur with their combination with his6-oph-based. Moscow University Chemistry Bulletin, 2018, 73(6), 298–302.
 10. Maslova O. V., Senko O. V., Efremenko E. N. The influence of enzymatic removal of chlorpyrifos from feed grain mixes on biochemical parameters of rat blood. Biochemistry, Supplemental Series B, 2018, 12(2), 181–185.
 11. Маслова О. В., Сенько О. В., Ефременко Е. Н. Полимеры аспарагиновой и глутаминовой кислот: получение и применение в медицинской химии и фармацевтике. Известия Академии наук. Серия химическая, 2018, (4), 614–623.
 12. Aslanli A., Lyagin I., Efremenko E. Novel approach to Quorum Quenching: rational design of antibacterials in combination with hexahistidine-tagged organophosphorus hydrolase, Biol. Chem., 2018, 399(8), 869-879.
 13. Dotsenko A.S., Dotsenko G.S., Senko O.V., Stepanov N.A., Lyagin I.V., Efremenko E.N., Gusakov A.V., Zorov I.N., Rubtsova E.A. Complex effect of lignocellulosic biomass pretreatment with 1-butyl-3-methylimidazolium chloride ionic liquid on various aspects of ethanol and fumaric acid production by immobilized cells within SSF, Bioresour. Technol., 2018, 250, 429-438. IF = 6.669.
 14. Stepanov N., Efremenko E. “Deceived» concentrated immobilized cells as biocatalyst for intensive bacterial cellulose production from various sources. Catalysts, 2018. 8(1), 33.
 15. Lyagin I.V., Efremenko E.N. Biomolecular engineering of biocatalysts hydrolyzing neurotoxic organophosphates, Biochimie, 2018, 144, 115-121. IF = 3.362.
 16. Maslova O., Aslanli A., Stepanov N., Lyagin I., Efremenko E. Catalytic Characteristics of New Antibacterials Based on Hexahistidine-Containing Organophosphorus Hydrolase, Catalysts, 2017, 7(9), 271.
 17. Efremenko E.N., Lyagin I.V., Cuong L.H., Huong L.M. Antioxidants as stabilizers for His₆-OPH: is this an unusual or regular role for them with enzymes? J. Biochem., 2017, 162(5), 327-334.
 18. Efremenko E.N., Lyagin I.V., Klyachko N.L., Bronich T., Zavyalova N.V., Jiang Y., Kabanov A.V. A simple and highly effective catalytic nanozyme scavenger for organophosphorus neurotoxins, J. Control. Release, 2017, 247, 175-181.
 19. Maslova O., Senko O., Stepanov N., Aslanli A., Efremenko E. His 6-OPH and its stabilized forms combating quorum sensing molecules of gram-negative bacteria in combination with antibiotics. Jundishapur Journal of Natural Pharmaceutical Products, 2017, 12(3), e63649.
 20. Senko O., Stepanov N., Tyutyunov A., Sterlin S., Grinberg V., Makhlis T., Efremenko E. Intensification of Organophosphorus Hydrolase Synthesis by Using Substances with Gas-Transport Function. Applied Sciences, 2017, 7(12), 1305.
 21. Senko O., Maslova O., Efremenko E. Optimization of the use of his6-oph-based enzymatic biocatalysts for the destruction of chlorpyrifos in soil. International Journal of Environmental Research and Public Health, 2017,14(12), 1438–15.
 22. Stepanov N., Efremenko E. Immobilised cells of Pachysolen tannophilus yeast for ethanol production from crude glycerol. New Biotechnology, 2017, 34, 54-58.
 23. Асланлы А. Г., Маслова, О. В., Сенько О. В., Ефременко Е. Н. Полифункциональный ферментный биопрепарат на основе гексагистидинсодержащей органофосфатгидролазы, действующий против бактериоза растений. Вестник биотехнологии и физико-химической биологии имени Ю.А. Овчинникова, 2017,13(4),13–17.
 24. Maslova O., Aslanli A., Stepanov N., Lyagin I., Efremenko E. Catalytic Characteristics of New Antibacterials Based on Hexahistidine-Containing Organophosphorus Hydrolase, Catalysts, 2017, 7(9), 271.

25. Лягин И.В., Ефременко Е.Н., Варфоломеев С.Д. Ферментные биосенсоры для определения пестицидов, Успехи химии, 2017, 86(4), 339-355.
26. Efremenko E. N., Maslova O. V., Kholstov A. V., Senko O. V., Ismailov A. D. Biosensitive element in the form of immobilized luminescent photobacteria for detecting ecotoxics in aqueous flow - through systems. Luminescence: the journal of biological and chemical luminescence, 2016, 31(6), 1283–1289.
27. Maslova O.V , Senko O.V , Stepanov N.A, Efremenko E.N . Lactic acid production using free cells of bacteria and filamentous fungi and cells immobilized in polyvinyl alcohol cryogel: a comparative analysis of the characteristics of biocatalysts and processes. Catalysis in Industry, 2016, 8(3),280–285.
28. Lyagin I.V., Andrianova M.S., Efremenko E.N. Extensive hydrolysis of phosphonates as unexpected behaviour of the known His₆-organophosphorus hydrolase, Appl. Microbiol. Biotechnol., 2016, 100(13), 5829-5838.
29. Ismayilov I. T., Abd El-Lateef Hany M., Abbasov V. M., Efremenko E. N., Aliyeva L. I., Salmanova Ch K. Enhanced corrosion inhibition of mild steel in CO₂-saturated solutions containing some novel green surfactants based on cottonseed oil. International Journal of Corrosion and Scale Inhibition, 2015, 4(1), 57–74.
30. Frančič N., Lyagin I.V., Efremenko E.N., Lobnik A. Hybrid sol-gel bio-films: influence of synthetic parameters on behaviour and performance of entrapped His₆-tagged organophosphorus hydrolase, J. Sol-Gel Sci. Technol., 2015, 74(2), 387-397.

Ученый секретарь диссертационного совета МГУ 02.08.,

Сакодынская Инна Карловна

15 сентября 2020 года

