Larionova Marina

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EDUCATIONAL BACKGROUND

- 2014 – 2018 PhD in Biophysics

Siberian Federal University, Institute of Fundamental Biology and Biotechnology, Institute of Biophysics of Federal Research Center "Krasnoyarsk Science Center", SB RAS

- 2012 – 2014 Master's degree in Biotechnology

Siberian Federal University, Institute of Fundamental Biology and Biotechnology, Russia
PhD thesis "The novel luciferase isoforms from copepod *Metridia longa*: properties and application" (2018)

WORKING EXPERIENCE

- 2020 – present Researcher

Photobiology laboratory, Institute of Biophysics of Federal Research Center "Krasnoyarsk Science Center" SB RAS

- 2019 – 2020 Postdoc

Liu Zhi-Jie Laboratory, Molecular Imaging Department, "iHuman" institute, ShanghaiTech University, Chinese Academy of Sciences

- 2015 – 2019 Engineer-researcher

Photobiology laboratory, Institute of Biophysics of Federal Research Center "Krasnoyarsk Science Center" SB RAS

- 2011 – 2015 Laboratory assistant

Photobiology Laboratory, Institute of Biophysics of Federal Research Center "Krasnoyarsk Science Center" SB RAS

AWARDS AND GRANTS

- 2014 National scholarship for achievements in the field of biological and agricultural sciences, Krasnoyarsk Government, Russia
- 2016 Research grant "Development of application of Metridia luciferase in bioluminescent immunoassay" (Innovation Promotion Foundation, N 0019849)
- 2017 Award of Nobel laureate Shimomura's Fund for achievements in the study of bioluminescence, Siberian Federal University, Russia
- 2018 National award for achievements in the field of professional education, Krasnoyarsk Government, Russia
- 2018 Diploma for the best scientific report, conference "Lomonosov-2018", Moscow
- 2020 Research grant "Development of bioluminescent sensors based on the Metridia luciferase for detection of protein-protein interactions" (RSF, project No. 21-74-00027).

CONFERENCES AND COURSES ATTENDED

- 2014 2nd International imaging workshop on modern methods of microscopy, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan
- 2017 North-Biotech-Young winter science school, Northern Arctic Federal University, Arkhangelsk, Russia
- 2017 12th International scientific conference on bioorganic chemistry, Moscow, Russia
- 2018 "Lomonosov-2018" conference, Moscow State University, Moscow, Russia
- 2018 18th Young Scientists Forum FEBS, Prague, Czech Republic
- 2019 XFEL User's meeting, Hamburg, Germany
- 2019 "From data collection to structure refinement and beyond", CCP4/Shanghai school in macromolecular crystallography, Shanghai, China
- 2021 IX Congress of the Russian Photobiology Society, Shepsi, Russia

PATENTS

Mutant copepod luciferase for the application as an in vivo and in vitro bioluminescent reporter. Markova S.V., Dmitrieva D.A., Larionova M.D., Vysotski E.S. (2021) N 2757736.

PUBLICATIONS IN PEER REVIEWED JOURNALS

1. Production of Metridia luciferase in native form by oxidative refolding from *E. coli* inclusion bodies. Markova SV, **Larionova MD**, Vysotski ES. *Methods Mol Biol*. 2022;2524:59-73.
2. Production of Copepod Luciferases via Baculovirus Expression System. **Larionova MD**, Markova SV, Vysotski ES. *Methods Mol Biol*. 2022;2524:75-89.
3. Molecular insights into ligand recognition and G protein coupling of the neuromodulatory orphan receptor GPR139 (2022) Zhou Y., Daver H., Trapkov B., Wu L., Wu M., Harpsøe K., Gentry P.R., Liu K., **Larionova M.,** Liu J., Chen N., Bräuner-Osborne H., Gloriam D.E., Hua T., Liu Z.J. *Cell Res.* 32(2):210-213.
4. Crystal structure of semisynthetic obelin-v (2022) **Larionova M.D.**, Wu L., Eremeeva E.V., Natashin P.V., Gulnov D.V., Nemtseva E.V., Liu D., Liu Z.J., Vysotski E.S. *Protein Sci*. 31(2):454-469.
5. The smallest isoform of *Metridia longa* luciferase as a fusion partner for hybrid proteins (2020) **Larionova, M.D.,** Markova S.V., Tikunova N.V., Vysotski E.S. *Int. J. Mol. Sci.* 21:4971.
6. Shining light on the secreted luciferases of marine copepods: current knowledge and applications (2019) Markova S.V., **Larionova, M.D.,** Vysotski E.S. *Photochem Photobiol.* 2019. 95:705-721.
7. Bioluminescent and structural features of native folded Gaussia luciferase (2018) **M.D. Larionova**, S.V. Markova, E.S. Vysotski. *J Photochem Photobiol, B*, 183, 309-317.
8. The disulfide-rich Metridia luciferase refolded from *E. coli* inclusion bodies reveals the properties of a native folded enzyme produced in insect cells (2017) S.V. Markova, **M.D. Larionova**, D.A. Gorbunova, E.S. Vysotski. *J Photochem Photobiol, B*, 175, 51-57.
9. The novel extremely psychrophilic luciferase from *Metridia longa*: properties of a high-purity protein produced in insect cells (2017) **M.D. Larionova**, S.V. Markova, E.S. Vysotski. *Biochem Biophys Res Commun*. 483 (1), 772-778.

10. Tyr72 and Tyr80 are involved in the formation of an active site of a luciferase of copepod *Metridia longa* (2017) **M.D. Larionova**, S.V. Markova, E.S. Vysotski. *Photochem Photobiol*. 93, 503-510.
11. The smallest natural high-active luciferase: cloning and characterization of novel 16.5-kDa luciferase from copepod *Metridia longa* (2015) S.V. Markova, **M.D. Larionova**, L.P. Burakova, E.S. Vysotski. *Biochem Biophys Res Commun*. 457, 77-82.