Oleg Moskvin, PhD.

Position: Sr. Research Scientist, Department of Molecular Biology, University of Wyoming
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Education

2000	PhD in Biological Sciences. Moscow State University, Biology Department, Moscow, Russia. *www.msu.ru/en/*
1990	MSc in Biology and Chemistry. Department of Biology and Chemistry, Mari State University. *Summa cum laude*.

Early and Recent Training in Natural and Formal Sciences

2005	Computational Biology Course (R, Perl, statistics), University of Wyoming
2002	Microarray Analysis Course, SiliconGenetics®, Denver, CO
1982-1984	Extramural School on Chemistry (for advanced high school students), Kazan State University, *www.ksu.ru/eng graduated with an honours degree*.
1982-1983	Extramural School on Physics and Mathematics (for advanced high school students), Moscow Institute of Physics and Technology *www.phystech.edu*

Professional experience

2002-present	Postdoctoral Fellow, Research Scientist, Senior Research Scientist, Lab. of Prof. Mark Gomelsky, Dept. of Molecular Biology, University of Wyoming, Laramie, WY, USA
2001-2002	Postdoctoral Fellow, Lab. of Prof. Akio Yamazaki, Kresge Eye Institute, Wayne State University, Detroit MI, USA.
2000-2001	Visiting Scientist (short-term research project), Lab. of Prof. Goran Samuelsson, Department of Plant Physiology, Umea University, Umea, Sweden.
1990-2001	Research Assistant, Junior Research Scientist, Research Scientist. Lab. of Carbon and Nitrogen Metabolism, Lab. of Photosynthetic Electron Transport., Inst. of Basic Biological Problems, Russian Academy of Sciences.

Awards

2006	Sponsored AAAS membership (AAAS/Science Program for Excellence in Science)
1999	Robert Havemann scholarship for young scientists (Germany)
1989	First place in the theoretical part of the USSR Student Biology Olympiad (Ashgabat, USSR).
1982-1984	First place in three consecutive years. Annual Republic High School Chemistry Olympiad (Yoshkar-Ola, Russia).

Publications

1. Gomelsky L., **Moskvin O.V.,** Stenzel R.A., Jones D.F., Donohue T.J. and Gomelsky M. **(2008)** Hierarchical regulation of photosynthesis gene expression by the oxygen-responsive PrrBA and AppA-PpsR systems of *Rhodobacter sphaeroides*. *Journal of Bacteriology* 190: 8106-8114

2. **Moskvin O.V.,** Kaplan S., Gilles-Gonzalez M.A. and Gomelsky M. (**2007**) Novel type of heme-based oxygen sensor with a revealing evolutionary history. *J. Biol. Chem.* 282: 28740-28748

   Featured in Faculty of 1000 Biology:
   Evaluations for Moskvin O.V. et. al., J. Biol. Chem. 2007 282 (39): 28740-28748 - http://www.f1000biology.com/article/id/1092051
   (Category: New Finding)

3. Zeller T., Mraheil M.A., **Moskvin O.V.,** Li K., Gomelsky M. and Klug G. (**2007**) Regulation of hydrogen peroxide-dependent gene expression in *Rhodobacter sphaeroides*: Regulatory functions of OxyR. *Journal of Bacteriology* 189:3784-3792

4. Zeller T., **Moskvin O.V.** ***(co-first author),*** Li K., Klug G. and Gomelsky M. (**2005**) Transcriptome and physiological responses to hydrogen peroxide of the facultatively phototrophic bacterium *Rhodobacter sphaeroides*. *Journal of Bacteriology* 187: 7232-7242

5. **Moskvin O.V**., Gomelsky L. and Gomelsky M. (**2005**) Transcriptome analysis of the *Rhodobacter sphaeroides* PpsR regulon: PpsR as master regulator of photosystem development. *Journal of Bacteriology* 187: 2148-2156

6. Ryjenkov D., Tarutina M., **Moskvin O.V.** and Gomelsky M. (**2005**) Cyclic Diguanylate Is a Ubiquitous Signaling Molecule in Bacteria: Insights into Biochemistry of the GGDEF Protein Domain. *Journal of Bacteriology* 187: 1792-1798

7. Braatsch S., **Moskvin O.V.** ***(co-first author)***, Klug G., and Gomelsky M. (**2004**) Responses of the *Rhodobacter sphaeroides* transcriptome to blue light under semiaerobic conditions. *Journal of Bacteriology* 186: 7726–7735

8. Pappas, C.T., Sram J., **Moskvin O.V.**, Ivanov P.S., Mackenzie R.C., Choudhary M., Land M.L., Larimer F.W., Kaplan S. and Gomelsky M. (**2004**). Construction and validation of the genome-wide DNA microarray of *Rhodobacter sphaeroides* 2.4.1: transcriptome flexibility at diverse growth modes. *Journal of Bacteriology* 186: 4748-4758

9. **Moskvin O.V**., Shutova T.V., Khristin M.S., Ignatova L.K., Villarejo A., Samuelsson G. Klimov V.V. and Ivanov B.N. (**2004**) Carbonic Anhydrase Activities In Pea Thylakoids: A Photosystem II Core Complex-Associated Carbonic Anhydrase. *Photosynthesis Research* 79: 93-100

10. Gomelsky L., Sram J., **Moskvin O.V.**, Horne I.M., Dodd H.N., Pemberton J.M., McEwan A.G., Kaplan S., Gomelsky M. (**2003**) Identification and in vivo characterization of PpaA, a regulator of photosystem formation in *Rhodobacter sphaeroides*. *Microbiology* 149: 377-88

11. Yamazaki A., **Moskvin O.**, Yamazaki R.K. (**2002**) Phosphorylation by cyclin-dependent protein kinase 5 of the regulatory subunit (Pgamma) of retinal cGMP phosphodiesterase (PDE6): its implications in phototransduction. *Adv Exp Med Biol*. 514: 131-53. (Review)

12. Villarejo A., Shutova T., **Moskvin O**., Forssen M., Klimov V., Samuelsson G. (**2002**) A photosystem II-associated carbonic anhydrase regulates the efficiency of photosynthetic oxygen evolution. *EMBO Journal* 21: 1930-1938

13. Ignatova LK, **Moskvin OV**, Ivanov BN (**2001**) Effects of carbonic anhydrase inhibitors on proton exchange and photosynthesis in pea protoplasts. *Russian Journal of Plant Physiology* 48: 467-472

14. **Moskvin O.V.,** Ivanov B.N., Ignatova L.K., Kollmeier M.A. (**2000**) Light-induced stimulation of carbonic anhydrase activity in pea thylakoids. *FEBS Lett.* 470: 375-377.

15. **Moskvin O.V**., Ignatova L.K., Ivanov B.N. (**1999**) Uncoupler-sensitive light-induced stimulation of carbonic anhydrase activity of pea thylakoids. *in: Photosynthesis: Mechanism and Effects (Garab, G., Ed.), Vol. II, pp. 1205-1208, Kluver AP, Dordrecht.*

16. **Moskvin O.V.,** Razguljayeva A.Y., Shutova T.V , Khristin M.S., Ivanov B.N., Klimov V.V. (**1999**) Carbonic anhydrase activity of different Photosystem II preparations. *in: Photosynthesis: Mechanism and Effects (Garab, G., Ed.), Vol. II, pp. 1201–1204, Kluver AP, Dordrecht.*

17. Ignatova L.K., **Moskvin O.V**., Romanova A.K., Ivanov B.N., (**1998**) Carbonic anhydrases in the C3 plant leaf cell. *Aust. J. Plant Physiol*. 25: 673-678.

18. **Moskvin O.V.,** Novichkova N.S., Ivanov B.N. (**1998**) Induction of chlorophyll *a* fluorescence in clover leaves grown at varying nitrogen supply and irradiance levels. *Russian Journal of Plant Physiology* 45: 353-358.

19. **Moskvin O.V**., Ovchinnikova V.I. and Ivanov B.N. (**1996**) The effect of light on the carbonic anhydrase activity of pea thylakoids. *Biofizika (Biophysics)* 41: 1067-1072.

20. **Moskvin O.V.,** Ignatova L.K., Ovchinnikova V.I. and Ivanov B.N. (**1995**) Membrane-associated carbonic anhydrase of pea thylakoids. *Biochemistry (Moscow)* 60: 859-864

21. Ignatova L.K., **Moskvin O.V*.** , Ivanov B.N. and Romanova A.K. (**1993**) The effect of CO_2 uptake by pea protoplasts on O_2 evolution rate and parameters of chlorophyll fluorescence quenching. *Plant Physiol. Biochem,* 31: 295-301.
    * - *corresponding author*

Invited Presentations on Transcriptomics

2005	5th Annual Northwest Gene Expression Conference, Seattle, WA
2003	11th International Symposium on Phototrophic Prokaryotes, Tokyo, Japan

Teaching Experience

2008	Guest Lectures in Biochemistry. MOLB3610/CHEM3610. University of Wyoming.
2004-2008	Guest Lectures and Labs in Microbial Gene Expression MOLB4051/ 5051. University of Wyoming.
2005	Guest Lectures in Microbial Physiology & Metabolism. MOLB 4460/ 5460 University of Wyoming.
1998	Guest Lectures "*Chlorophyll a fluorescence as a tool to monitor energy transduction in thylakoid membrane* ". Photobiology Department, Pushchino State University, Pushchino Biological Research Center, Russia.

Supervisory Experience

2007	Maureen Yu (undergraduate, Amherst College). Project: "Prediction of sRNA genes in *Rhodobacter sphaeroides*". Wyoming Summer Undergraduate Bioinformatics Research Program.
2005	Andrew Wang (high school minority student). Project: "Gene Hunting: Search for Unknown Genes in *Rhodobacter sphaeroides*". Summer Research Apprenticeship Program at the University of Wyoming. *The Best Presentation Award*.
2003-2005	Supervised variety of scholars from different institutions worldwide in collaborative GeneChip projects: Min Hyan Ryu (Graduate student, Sogan University, S. Korea), Minoru Tsuzuki (Graduate student, University of Tokyo, Japan), Dr. R. Liz Sockett (Professor in Genetics, University of Nottingham, UK), Dr. Jill Zeilstra-Ryalls (Associate Professor, Oakland University), Stephan Braatsch (Postdoc, Universitat Giessen, Germany).
1998	Michelle Kollmeier (a US exchange student). Project: "Thylakoid carbonic anhydrase and the light reactions of photosynthesis". Institute of Basic Biological Problems, Pushchino, Russia. This work has been awarded a *gold medal* in the Saint John's Science Symposium.

Memberships

- American Association for the Advancement of Science (AAAS)
- American Society for Microbiology (ASM)
- International Society for Photosynthesis Research (ISPR)

Cumulative citations of research papers: over 200

H-Index: 10