
 CURRICULUM VITAE

NAME Kudryashov, Dmitri S.	POSITION TITLE Assistant Professor
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EDUCATION & TRAINING:

START MONTH/ YEAR	END MONTH/ YEAR	DEGREE (if applicable)	INSTITUTION AND LOCATION	TRAINING MENTOR	SCIENTIFIC DISCIPLINE
09/1989	06/1993	B.S.	The Russian State Medical University (Moscow, Russia)		Medical Biochemistry
09/1993	06/1995	M.D.	The Russian State Medical University (Moscow, Russia)		Medical Biochemistry
09/1995	05/2000	Ph.D.	The Russian Academy of Medical Sciences (Moscow, Russia)	Vladimir P. Shirinsky	Biochemistry
04/2001	03/2006	Postdoctoral Fellow	University of California, Los Angeles (California, USA)	Emil Reisler	Biochemistry
04/2006	03/2011	Assistant Research Biochemist	University of California, Los Angeles (California, USA)	Emil Reisler	Biochemistry

PROFESSIONAL POSITIONS:

START MONTH/ YEAR	END MONTH/ YEAR	POSITION TITLE	DEPARTMENT	INSTITUTION AND LOCATION
04/2011	Present	Assistant Professor	Chemistry and Biochemistry	The Ohio State University Columbus, OH

SIGNIFICANT PROFESSIONAL ACTIVITIES:

Teaching:

- 2015 Early Experience in Biochemical Research (undergraduate course), OSU, Primary instructor
- 2013-2015 Honors Thesis Research in Biochemistry, (undergraduate course), OSU, Primary Instructor
- 2012-2015 Research for Dissertation (graduate course), OSU, Primary Instructor
- 2014-2015 Advanced Topics in Biochemistry: Actin Cytoskeleton in Health and Disease (graduate course), OSU, Primary Instructor; curriculum development
- 2013 Ohio State Biochemistry Program Graduate Student Seminars, OSU, Primary Instructor

- 2012-2015 Biological Chemistry (undergraduate course), OSU, Primary Instructor
 2012-2014 Research Focus Group Seminars, OSU, Dept. Chemistry & Biochemistry, Primary Instructor

Oral Presentations:

- 06.13.2016 University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA
 04.05.2016 University of Oregon, Department of Chemistry and Biochemistry, Eugene, OR
 02.29.2016 CMIB program seminar, OSU, Columbus, OH
 02.19.2016 University of California at Los Angeles, Department of Microbiology, Immunology and Molecular Genetics, Los Angeles, CA
 02.18.2016 University of California at Riverside, Department of Chemistry, Riverside, CA
 02.11.2016 Iowa State University, Department of Biochemistry, Biophysics, & Molecular Biology, Ames, IA
 02.03.2016 Science Café program, Columbus, OH
 10.14.2015 Ohio State University, College of Pharmacy, Columbus, OH
 09.14.2015 University of Maryland, Department of Biochemistry & Molecular Biology, Baltimore, MD
 06.24.2015 17th European Workshop on Bacterial Protein Toxins (ETOX17), Braga, Portugal
 05.03.2015 Young Investigator Prize Lecture, Gordon Research Conference, Pisa, Italy
 04.09.2015 Ohio State University, Department of Biomedical Engineering, Columbus, OH
 04.17.2015 Edinboro University, Edinboro, PA
 04.24.2015 Buckeye Cell Biology Meeting, ASCB, OSU, Columbus, OH
 12.07.2014 American Society for Cell Biology Meeting, Philadelphia, PA
 12.07.2014 American Society for Cell Biology Meeting, micro-symposium talk, Philadelphia, PA
 11.15.2013 University of Illinois at Chicago, Department of Physiology and Biophysics, Chicago, IL
 01.2012 Nationwide Children's Hospital, Center for Mathematical Medicine, Columbus, OH
 12.2010 University of Delaware, Department of Chemistry, Newark, DE
 02.2010 The Ohio State University, Columbus, OH
 05.2009 Sanford-Burnham Research Institute, La Jolla, CA
 06.2008 Case Western University, Department of Biophysics, Cleveland, OH
 10.2008 Annual Lake Arrowhead Retreat of the Molecular Biology Institute, UCLA, Lake Arrowhead, CA
 02.2008 Cincinnati Children's Hospital, Cincinnati, OH
 03.2008 Biophysical Society Meeting, Long Beach, CA
 01.2008 Loyola University of Chicago, Chicago, IL

Honors and Awards:

- 2015 ASCB-Gibco Award, Emerging Leader Finalist
 2015 Young Investigator Award, Gordon Research Conference "Antimicrobial Peptides"
 2015 Institutional Research Grant, The American Cancer Society
 2013-2014 *Innovative Concept Award*, U.S. Department of Defense, Congressionally Directed Medical Research Programs Lung Cancer
 2012-2014 *Innovative Research Grant*, The American Heart Association
 2005 *Herbert Newby McCoy Award* for the Greatest Contribution of the Year to the Science of Chemistry, Department of Chemistry and Biochemistry, UCLA
 2005 *Boyer-Peter Award* for outstanding postdoctoral studies in Biochemistry, Department of Chemistry and Biochemistry, UCLA
 2005 *Postdoctoral Recognition Award*, Department of Chemistry and Biochemistry, UCLA
 2004-2006 *Postdoctoral Fellowship*, The American Heart Association

Editorship and Advisory Panels:

- 2015 - Applied Microbiology and Biotechnology, Manuscript Reviewer
- 2015 - Applied Microbiology and Biotechnology, Manuscript Reviewer
- 2015 - Nature communications, Manuscript Reviewer
- 2014 - Toxins, Manuscript Reviewer
- 2014 - Molecular Microbiology, Manuscript Reviewer
- 2014 - Microbial Pathogenesis, Manuscript Reviewer
- 2014 - OSU, RSS Faculty Advisory Committee, Member
- 2013-2014 OSU, Bio-division 1st year doctoral students, Co-Advisor
- 2013 - National Innovative Research Grant (IRG), American Heart Association, Invited Reviewer
- 2012 - Graduate Student Admission Committee, OSU, Dept. Chemistry & Biochemistry, Member
- 2011-2013 Graduate admission committee, OSU, Ohio State Biochemistry Program, Member
- 2011, 2015 The Research Grants Council of Hong Kong, Invited Reviewer
- 2008 Biophysical Society, Biophysical Society Motility Subgroup, Co-chair

Professional Memberships:

- 2014-present Center for Microbial Interface Biology, OSU
- 2014-present Public Health Preparedness for Infectious Diseases Program, OSU
- 2012-present American Heart Association
- 2011-present Ohio State Biochemistry Program, OSU
- 2011-present Molecular, Cellular and Developmental Biology Graduate Program, OSU
- 2011-present Interdisciplinary Biophysics Graduate Program, OSU
- 2004-present American Society for Cell Biology
- 2001-2005, 2008 Biophysical Society

PEER-REVIEWED PUBLICATIONS:

- 34. Kudryashova E, Lu W, Kudryashov DS "Defensins versus pathogens: an unfolding study." ***Oncotarget*** (accepted as of July 24, 2015) - ***Invited Editorial***.
- 33. Heisler DB, Kudryashova E, Grinevich DO, Suarez C, Winkelman JD, Birukov KG, Kotha SR, Parinandi NL, Vavylonis D, Kovar DR, Kudryashov DS "ACD toxin-produced actin oligomers poison formin-controlled actin polymerization." (2015) ***Science*** 349(6247):535-9.
- 32. Kudryashova E, Seveau S, Lu W, Kudryashov DS "Retrocyclins neutralize bacterial toxins by potentiating their unfolding." (2015) ***Biochemical Journal*** 367(2): 311-320.
- 31. Wang N, Wang M, Zhu YH, Grosel, TW, Sun D, Kudryashov DS, Wu JQ "The Rho-GEF Gef3 interacts with the septin complex and activates the GTPase Rho4 during fission yeast cytokinesis." (2015) ***Molecular Biology of the Cell*** 26(2): 238-255.
- 30. Ge P, Oztug Durer ZA, Kudryashov DS, Zhou HZ, Reisler E "CryoEM reveals different coronin binding modes for ADP- and ADP-BeFx- actin filaments." (2014) ***Nature Structural & Molecular Biology*** 21(12): 1075-1081. ***F1000Prime recommended***.
- 29. Kudryashova E, Quintyn RS, Lu W, Seveau S, Wsocki V, Kudryashov DS "Human defensins facilitate local unfolding of thermodynamically unstable regions of bacterial protein toxins." (2014) ***Immunity*** 41(5): 709-721. ***Highlighted in Immunity, NSF Science360 News, Nature Immunology. F1000Prime recommended***.
- 28. Kudryashova E, Heisler D, Zywiec A, Kudryashov DS "Thermodynamic properties of the effector domains of MARTX toxins suggest their unfolding for translocation across the host membrane." (2014) ***Molecular Microbiology*** 92(5): 1056-1071.

27. Lyon AN, Pineda RH, Kudryashova E, Kudryashov DS, Beattie CE "Calcium binding is essential for plastin-3 function in Smn-deficient motor neurons." (2014) **Human Molecular Genetics** 23(8): 1990-2004.
26. Kudryashov DS, Reisler E "ATP and ADP actin states." (2013) **Biopolymers** 99(4): 245–256.
25. Durer ZA, Kudryashov DS, Sawaya MR, Altenbach C, Hubbell W, Reisler E "Structural States and Dynamics of the D-Loop in Actin." (2012) **Biophysical Journal** 103(5): 930-939.
24. Kudryashova E, Kalda C, Kudryashov DS "Glutamyl Phosphate Is an Activated Intermediate in Actin Crosslinking by Actin Crosslinking Domain (ACD) Toxin." (2012) **PLoS One** 7(9): e45721.
23. Galkin VE, Orlova A, Kudryashov DS, Solodukhin A, Reisler E Schröder GF, Egelman EH "Remodeling of actin filaments by ADF/cofilin proteins." (2011) **Proceedings of the National Academy of Sciences USA** 108(51): 20568-20572.
22. Kudryashov DS, Grintsevich EE, Rubenstein PA, Reisler E "A Nucleotide State-sensing Region on Actin." (2010) **Journal of Biological Chemistry** 285(33): 25591-25601.
21. Grintsevich EE, Galkin VE, Orlova A, Ytterberg AJ, Mikati MM, Kudryashov DS, Loo JA, Egelman EH, Reisler E "Mapping of Drebrin Binding Site on F-Actin." (2010) **Journal of Molecular Biology** 398(4): 542-554.
20. Oztug Durer ZA, Diraviyam K, Sept D, Kudryashov DS, Reisler E "F-Actin Structure Destabilization and DNase I Binding Loop Fluctuations Mutational Cross-Linking and Electron Microscopy Analysis of Loop States and Effects on F-Actin." (2010) **Journal of Molecular Biology** 395(3): 544-557.
19. Kudryashov DS, Durer ZA, Ytterberg AJ, Sawaya MR, Pashkov I, Yeates TO, Ogorzalek Loo R, Loo J, Satchell KJ, Reisler E "Connecting actin monomers by iso-peptide bond is a toxicity mechanism of the Vibrio cholerae MARTX toxin." (2008) **Proceedings of the National Academy of Sciences USA** 105(47): 18537-42.
18. Sawaya* MR, Kudryashov* DS, Pashkov* I, Reisler E, Yeates TO "Multiple crystal structures of actin dimers and their implications for interactions in the actin filament." (2008) **Acta Crystallographica Section D, Biological crystallography** 64: 454-65. * Co-first authors.
17. Kudryashov* DS, Cordero* CL, Reisler E, Satchell KJ "Characterization of the enzymatic activity of the actin cross-linking domain from the Vibrio cholerae MARTX(Vc) toxin." (2008) **Journal of Biological Chemistry** 283(1): 445-452. * Co-first authors.
16. Cordero* CL, Kudryashov* DS, Reisler E, Satchell KJ "The actin cross-linking domain of the Vibrio cholerae RTX toxin directly catalyzes the covalent cross-linking of actin." (2006) **Journal of Biological Chemistry** 281(43): 32366-32374. * Co-first authors.
15. Kudryashov# DS, Galkin VE, Orlova A, Phan M, Egelman EH, Reisler E "Cofilin cross-bridges adjacent actin protomers and replaces part of the longitudinal F-actin interface." (2006) **Journal of Molecular Biology** 358(3): 785-97. # Corresponding author.
14. Kudryashova E, Kudryashov D, Kramerova I, Spencer MJ "Trim32 is a ubiquitin ligase mutated in limb girdle muscular dystrophy type 2H that binds to skeletal muscle myosin and ubiquitinates actin." (2005) **Journal of Molecular Biology** 354(2): 413-424.
13. Kudryashov DS, Sawaya MR, Adisetiyo H, Norcross T, Hegyi G, Reisler E, Yeates TO "The crystal structure of a cross-linked actin dimer suggests a detailed molecular interface in F-actin." (2005) **Proceedings of the National Academy of Sciences USA** 102(37): 13105-13110.
12. Orlova A, Shvetsov A, Galkin VE, Kudryashov DS, Rubenstein PA, Egelman EH, Reisler E "Actin-destabilizing factors disrupt filaments by means of a time reversal of polymerization." (2004) **Proceedings of the National Academy of Sciences USA** 101(51): 17664-17668.
11. Muhlrad A, Kudryashov D, Michael Peyser Y, Bobkov AA, Almo SC, Reisler E "Cofilin induced conformational changes in F-actin expose subdomain 2 to proteolysis." (2004) **Journal of Molecular Biology** 342(5): 1559-1567.
10. Kudryashov DS, Stepanova OV, Vilitkevich EL, Nikonenko TA, Nadezhdina ES, Shanina NA, Lukas TJ, Van Eldik LJ, Watterson DM, Shirinsky VP. "Myosin light chain kinase (210 kDa) is a potential cytoskeleton integrator through its unique N-terminal domain." (2004) **Experimental Cell Research** 298(2): 407-417.
9. Kudryashov DS, Phillips M, Reisler E "Formation and destabilization of actin filaments with

- tetramethylrhodamine-modified actin." (2004) *Biophysical Journal* 87(2): 1136-1145. *Editor's Choice Article*.
8. Vilitkevich EL, Kudriashev DS, Stepanova OV, Shirinsky VP "A new actinbinding area of the myosin light chains' high-molecular kinase." (2004) *Ross Fiziol Zh Im I.M. Sechenova (Russian journal of physiology, Rus)* 90(5): 577-585.
 7. Kudryashov DS, Reisler E "Solution properties of tetramethylrhodamine-modified G-actin." (2003) *Biophysical Journal* 85(4): 2466-2475.
 6. Kudryashov DS, Vorotnikov AV, Dudnakova TV, Stepanova OV, Lukas TJ, Sellers JR, Watterson DM, Shirinsky VP "Smooth muscle myosin filament assembly under control of a kinase-related protein (KRP) and caldesmon." (2002) *Journal of Muscle Research and Cell Motility* 23(4): 341-351.
 5. Krymsky MA, Kudryashov DS, Shirinsky VP, Lukas TJ, Watterson DM, Vorotnikov AV "Phosphorylation of kinase-related protein (telokin) in tonic and phasic smooth muscles." (2001) *Journal of Muscle Research and Cell Motility* 22(5):425-437.
 4. Chibalina MV, Kudriashov DS, Shekhonin BV, Shirinskiĭ VP "Functional properties and intracellular localization of high molecular weight isoform of myosin light chain kinase." (2000) *Tsitologia (Cytology, Rus)* 42(3): 248-255.
 3. Vorotnikov AV, Krymsky MA, Chibalina MV, Kudriashov DS, Shirinsky VP "Differences in contraction and regulatory protein phosphorylation of phasic and tonic smooth muscles." (2000) *Tsitologia (Cytology, Rus)* 42(4): 378-391.
 2. Kudryashov DS, Chibalina MV, Birukov KG, Lukas TJ, Sellers JR, Van Eldik LJ, Watterson DM, Shirinsky VP "Unique sequence of a high molecular weight myosin light chain kinase is involved in interaction with actin cytoskeleton." (1999) *FEBS Letters* 463(1-2): 67-71.
 1. Bushueva TL, Teplova MV, Bushuev VN, Kudriashov DS, Vorotnikov AV, Shirinskiĭ VP "Stability of the structure of KRP (kinase-related protein)." (1999) *Molecular Biology (Rus)* 33(2): 227-236.

Complete List of Published Work in NCBI (MyBibliography):

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1xydooqLuN2QT/bibliography/47595080/public/?sort=date&direction=descending>

ACTIVE GRANTS:

1. **Title:** "The 'Split and splice' approach for highly selective targeting of human NSCLC tumors"
Number: W81XWH-13-1-0258
Name of PI: Dmitri Kudryashov
Funding Agency: Department of Defense, The Congressionally Directed Medical Research Programs (CDMRP), Lung Cancer Research Program - Concept Award
Award Period: 09/30/2013 – 09/29/2014
Status: no-cost extension (until 09/29/2015)
2. **Title:** "Invasive cancer marker plastin-2: Ca²⁺ and pH-dependent regulation mechanisms and drug targeting"
Number: IRG-67-003-47
Name of PI: Dmitri Kudryashov
Funding Agency: The American Cancer Society (ACS) - Institutional Research Grant
Award Period: 03/01/15 – 02/29/16
Status: Active
3. **Title:** "Actin oligomers as novel toxins targeting key steps of actin dynamics"
Number: Pending
Name of PI: Dmitri Kudryashov

Funding Agency: The National Institute of General Medical Sciences (NIGMS) – RO1

Award Period: 01/01/16 – 12/31/21

Status: Notice of award is pending (as informed by an NIH grant officer)

COMPLETED GRANTS:

4. 1. *Title:* “Split toxins as a novel approach for selective targeting of nuclear actin”

Name of PI: Dmitri Kudryashov

Funding Agency: American Heart Association - *National Innovative Research Grant*

Award Period: 01/01/13 – 12/31/14

Status: Completed