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SUMMARY OF GOVERNMENT WORK

Products and services

Education: Courses for Professional Development

Research: Biomedical Research, Protein Modeling, Drug Design

Technology: New technologies for protein modeling and structure prediction of proteins
(Supplement for the Courses for Professional Development and Biomedical Research)

Past Performance

NIH (Biomedical Research, Protein Modeling, Drug Design. Teaching Courses for Professional Development “Protein Modeling”).

DOT (Development of algorithms, data base/software for transportation safety and accounting)

American Red Cross (collaborative agreement in Biomedical Research and Protein Modeling).

Publications that include work on projects listed above

1. Yardeni, T., Choekyi, T., Jacobs, K., Ciccone, C., Patzel, K., Anikster, Y., Gahl, W. A., Kurochkina, N., Huizing, M. (2011) Identification, Tissue Distribution and Molecular Modeling of Novel Human Isoforms of the Key Enzyme in Sialic Acid Synthesis, UDP-GlcNAc 2-epimerase/ManNAc Kinase *Biochemistry*, 50, 8914.
2. Kurochkina, N., Guha, U. (2014) SH3 domains: modules of protein-protein interactions. *Biophysical Reviews* DOI: 10.1007/s12551-012-0081-z.
3. Kurochkina, N., Iadarola, M. (2015) Helical assemblies: Structure determinants. *Journal of Theoretical Biology*. 369C 80-84 <http://dx.doi.org/10.1016/j.jtbi.2015.01.012>
4. Kurochkina, N., Guha, U., Lu, Z. (2015) SH Domains and Epidermal Growth Factor Receptors. In: SH Domains. Structure, mechanisms, and applications. Ed: Kurochkina. Springer, 2015.
5. Kurochkina, N., Iadarola M. (2015) SH Domains and Helical Assemblies. In: SH Domains. Structure, mechanisms, and applications. Ed: Kurochkina. Springer, 2015.
6. Kurochkina N, Bhaskar M, Yadav SP, Pant HC. Phosphorylation, Dephosphorylation, and Multiprotein Assemblies Regulate Dynamic Behavior of Neuronal Cytoskeleton:

A Mini-Review. *Front Mol Neurosci*. 2018;11:373. Published 2018 Oct 8.
doi:10.3389/fnmol.2018.00373

7. SH Domains. Structure, mechanisms, and applications. Ed: Kurochkina. Springer, 2015. <https://link.springer.com/book/10.1007/978-3-319-20098-9>
8. Hall BE, Prochazkova M, Sapio MR, Minetos P, Kurochkina N, Binukumar BK, Amin ND, Terse A, Joseph J, Raithel SJ, Mannes AJ, Pant HC, Chung MK, Iadarola MJ, Kulkarni AB. Phosphorylation of the Transient Receptor Potential Ankyrin 1 by Cyclin-dependent Kinase 5 affects Chemo-nociception. *Sci Rep*. 2018 Jan 19;8(1):1177. doi: 10.1038/s41598-018-19532-6. PubMed PMID: 29352128; PubMed Central PMCID: PMC5775258
9. Natalya Kurochkina. Protein Structure and Modeling. Springer 2019.
<https://link.springer.com/book/10.1007/978-981-13-6601-7>
10. Kurochkina N, Sapio MR, Iadarola MJ, Hall BE, Kulkarni AB. Multiprotein Assemblies, Phosphorylation and Dephosphorylation in Neuronal Cytoskeleton. *bioRxiv* [Preprint]. 2023 Jun 22:2023.06.21.545989. doi: 10.1101/2023.06.21.545989. PMID: 37502949; PMCID: PMC10370197. Preprint: Multiprotein Assemblies, Phosphorylation and Dephosphorylation in Neuronal Cytoskeleton.
<https://doi.org/10.1101/2023.06.21.545989> (doi: 10.1101/2023.06.21.545989).
11. M.R. Sapio, D.M. King, E.S. Staedtler, et al., Expression pattern analysis and characterization of the hereditary sensory and autonomic neuropathy 2A (HSAN2A) gene with no lysine kinase (WNK1) in human dorsal root ganglion, *Experimental Neurology* (2023), <https://doi.org/10.1016/j.expneurol.2023.114552>