

Publication List (Chronologically)

85 peer reviewed publications

4 Reviews

h-index 39 Citation: 5857 without self-citation

bold: Key publications

*24 publications - first author ** 11 publications - corresponding author *** 2 book chapter

1. **** Hammel, M., and Tainer, J. A. (2021) X-ray scattering reveals disordered linkers and dynamic interfaces in complexes and mechanisms for DNA double-strand break repair impacting cell and cancer biology. *Protein Sci* in print**
2. Rashid, I., **Hammel, M.***, Sverzhinsky, A., Tsai, M. D., Pascal, J., Tainer, J. A., and Tomkinson, A. E. (2021) Direct interaction of tyrosyl DNA phosphodiesterase 1 with DNA ligase III catalytic domain is regulated by phosphorylation of its flexible N-terminus. *Journal of Biological Chemistry* **in print**
3. Wilamowski, M., **Hammel, M.***, Leite, W., Zhang, Q., Kim, Y., Weiss, K., Jedrzejczak, R., Rosenberg, D. J., Fan, Y., Bierma, J., Sarker, A. H., Tsutakawa, S. E., Pingali, S. V., O'Neill, H. M., Joachimiak, A., Hura, G. L., (2021) Transient and stabilized complexation of Nsp7, Nsp8 and Nsp12 in the SARS-CoV-2 replication-transcription complex (RTC). *Biophysical Journal* **in print**
4. **** Hammel, M.**, Rosenberg, D. J., Bierma, J., Hura, G. L., Thapar, R., Lees-Miller, S. P., and Tainer, J. A. (2021) Visualizing functional dynamicity in the DNA-dependent protein kinase holoenzyme DNA-PK complex by integrating SAXS with cryo-EM. *Progress in biophysics and molecular biology* **163**, 74-86
5. **Hodge, C. D., Rosenberg, D. J., Grob, P., Wilamowski, M., Joachimiak, A., Hura, G. L., and Hammel, M. ** (2021) Rigid monoclonal antibodies improve detection of SARS-CoV-2 nucleocapsid protein. *MAbs* **13**, 1905978**
6. Walker, R. G., Kattamuri, C., Goebel, E. J., Zhang, F., **Hammel, M.**, Tainer, J. A., Linhardt, R. J., and Thompson, T. B. (2021) Heparin-mediated dimerization of follistatin. *Exp Biol Med (Maywood)* **246**, 467-482
7. Thapar, R., Wang, J. L., **Hammel, M.**, Ye, R., Liang, K., Sun, C., Hnizda, A., Liang, S., Maw, S. S., Lee, L., Villarreal, H., Forrester, I., Fang, S., Tsai, M. S., Blundell, T. L., Davis, A. J., Lin, C., Lees-Miller, S. P., Strick, T. R., and Tainer, J. A. (2021) Mechanism of efficient double-strand break repair by a long non-coding RNA. *Nucleic acids research* **49**, 1199-1200
8. Lees-Miller, J. P., Cobban, A., Katsonis, P., Bacolla, A., Tsutakawa, S. E., **Hammel, M.**, Meek, K., Anderson, D. W., Lichtarge, O., Tainer, J. A., and Lees-Miller, S. P. (2021) Uncovering DNA-PKcs ancient phylogeny, unique sequence motifs and insights for human disease. *Progress in biophysics and molecular biology* **163**, 87-108
9. **Hammel, M.**, Rashid, I., Sverzhinsky, A., Pourfarjam, Y., Tsai, M. S., Ellenberger, T., Pascal, J. M., Kim, I. K., Tainer, J. A., and Tomkinson, A. E. (2021) An atypical BRCT-BRCT

- interaction with the XRCC1 scaffold protein compacts human DNA Ligase IIIalpha within a flexible DNA repair complex. *Nucleic acids research* **49**, 306-321
10. Tsutakawa, S. E., Sarker, A. H., Ng, C., Arvai, A. S., Shin, D. S., Shih, B., Jiang, S., Thwin, A. C., Tsai, M. S., Willcox, A., Her, M. Z., Trego, K. S., Raetz, A. G., Rosenberg, D., Bacolla, A., **Hammel, M.**, Griffith, J. D., Cooper, P. K., and Tainer, J. A. (2020) Human XPG nuclease structure, assembly, and activities with insights for neurodegeneration and cancer from pathogenic mutations. *Proc Natl Acad Sci U S A* **117**, 14127-14138
 11. **Remesh, S. G., Verma, S. C., Chen, J. H., Ekman, A. A., Larabell, C. A., Adhya, S., and Hammel, M.**** (2020) Nucleoid remodeling during environmental adaptation is regulated by HU-dependent DNA bundling. *Nature communications* **11**, 2905
 12. Weinhardt, V., Chen, J. H., Ekman, A. A., Guo, J., Remesh, S. G., **Hammel, M.**, McDermott, G., Chao, W., Oh, S., Le Gros, M. A., and Larabell, C. A. (2020) Switchable resolution in soft x-ray tomography of single cells. *PLoS One* **15**, e0227601
 13. Topolska-Wos, A. M., Sugitani, N., Cordoba, J. J., Le Meur, K. V., Le Meur, R. A., Kim, H. S., Yeo, J. E., Rosenberg, D., **Hammel, M.**, Scharer, O. D., and Chazin, W. J. (2020) A key interaction with RPA orients XPA in NER complexes. *Nucleic acids research* **48**, 2173-2188
 14. Dominguez-Martin, M. A., **Hammel, M.**, Gupta, S., Lechno-Yossef, S., Sutter, M., Rosenberg, D. J., Chen, Y., Petzold, C. J., Ralston, C. Y., Polivka, T., and Kerfeld, C. A. (2020) Structural analysis of a new carotenoid-binding protein: the C-terminal domain homolog of the OCP. *Sci Rep* **10**, 15564
 15. Pinals, R. L., Yang, D., Rosenberg, D. J., Chaudhary, T., Crothers, A. R., Iavarone, A. T., **Hammel, M.**, and Landry, M. P. (2020) Quantitative Protein Corona Composition and Dynamics on Carbon Nanotubes in Biological Environments. *Angew Chem Int Ed Engl* **59**, 23668-23677
 16. Banda, D. M., Pereira, J. H., Liu, A. K., Orr, D. J., **Hammel, M.**, He, C., Parry, M. A. J., Carmo-Silva, E., Adams, P. D., Banfield, J. F., and Shih, P. M. (2020) Novel bacterial clade reveals origin of form I Rubisco. *Nat Plants* **9**, 1158-1166
 17. Zhou, Y., Millott, R., Kim, H. J., Peng, S., Edwards, R. A., Skene-Arnold, T., **Hammel, M.**, Lees-Miller, S. P., Tainer, J. A., Holmes, C. F. B., and Glover, J. N. M. (2019) Flexible Tethering of ASPP Proteins Facilitates PP-1c Catalysis. *Structure* **27**, 1485-1496 e1484
 18. Knott, G. J., Cress, B. F., Liu, J. J., Thornton, B. W., Lew, R. J., Al-Shayeb, B., Rosenberg, D. J., **Hammel, M.**, Adler, B. A., Lobba, M. J., Xu, M., Arkin, A. P., Fellmann, C., and Doudna, J. A. (2019) Structural basis for AcrVA4 inhibition of specific CRISPR-Cas12a. *Elife* **8**
 19. Horst, B. G., Yokom, A. L., Rosenberg, D. J., Morris, K. L., **Hammel, M.**, Hurley, J. H., and Marletta, M. A. (2019) Allosteric activation of the nitric oxide receptor soluble guanylate cyclase mapped by cryo-electron microscopy. *Elife* **8**
 20. Ge, J., Remesh, S. G., **Hammel, M.**, Pan, S., Mahan, A. D., Wang, S., and Wang, X. (2019) Functional Relevance of Interleukin-1 Receptor Inter-domain Flexibility for Cytokine Binding and Signaling. *Structure* **27**, 1296-1307 e1295
 21. Foster, B. M., Rosenberg, D., Salvo, H., Stephens, K. L., Bintz, B. J., **Hammel, M.**, Ellenberger, T., Gainey, M. D., and Wallen, J. R. (2019) Combined Solution and Crystal Methods Reveal the Electrostatic Tethers That Provide a Flexible Platform for Replication Activities in the Bacteriophage T7 Replisome. *Biochemistry* **58**, 4466-4479

22. Zhang, S., Zhou, P., Wang, P., Li, Y., Jiang, L., Jia, W., Wang, H., Fan, A., Wang, D., Shi, X., Fang, X., **Hammel, M.**, Wang, S., Wang, X., and Zhang, L. (2018) Structural Definition of a Unique Neutralization Epitope on the Receptor-Binding Domain of MERS-CoV Spike Glycoprotein. *Cell Rep* **24**, 441-452
23. *****Schneidman-Duhovny D, Hammel M. ** Modeling Structure and Dynamics of Protein Complexes with SAXS Profiles. Methods Mol Biol. (2018) ;1764:449-473.**
24. Zhang S, Zhou P, Wang P, Li Y, Jiang L, Jia W, Wang H, Fan A, Wang D, Shi X, Fang X, **Hammel M**, Wang S, Wang X, Zhang L. *Cell Rep.* (2018) Structural Definition of a Unique Neutralization Epitope on the Receptor-Binding Domain of MERS-CoV Spike Glycoprotein. *24(2):441-452*
25. **Remesh SG, Armstrong AA, Mahan AD, Luo J, Hammel M. ** (2018) Conformational Plasticity of the Immunoglobulin Fc Domain in Solution. Structure. 3;26(7):1007-1014**
26. Aceytuno, R. D., Pieltt, C. G., Havali-Shahriari, Z., Edwards, R. A., Rey, M., Ye, R., Javed, F., Fang, S., Mani, R., Weinfeld, M., **Hammel, M.**, Tainer, J. A., Schriemer, D. C., Lees-Miller, S. P., and Glover, J. N. M. (2017) Structural and functional characterization of the PNKP-XRCC4-LigIV DNA repair complex. *NAR* **45**, 6238-6251
27. Leksa, N. C., Chiu, P. L., Bou-Assaf, G. M., Quan, C., Liu, Z., Goodman, A. B., Chambers, M. G., Tsutakawa, S. E., **Hammel, M.**, Peters, R. T., Walz, T., and Kulman, J. D. (2017) The structural basis for the functional comparability of factor VIII and the long-acting variant recombinant factor VIII Fc fusion protein. *J Thromb Haemost* **15**, 1167-1179
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29. Nikolaienko, R. M., **Hammel, M.**, Dubreuil, V., Zalmay, R., Hall, D. R., Mehzabeen, N., Karuppan, S. J., Harroch, S., Stella, S. L., and Bouyain, S. (2016) Structural Basis for Interactions Between Contactin Family Members and Protein Tyrosine Phosphatase Receptor Type G in Neural Tissues. *JBC* **291**, 21335-21349
30. **** Hammel, M., Amlanjyoti, D., Reyes, F. E., Chen, J. H., Parpana, R., Tang, H. Y., Larabell, C. A., Tainer, J. A., and Adhya, S. (2016) HU multimerization shift controls nucleoid compaction. Science Adv 2, e1600650**
31. Schneidman-Duhovny, D., **Hammel, M.**, Tainer, J. A., and Sali, A. (2016) FoXS, FoXSDock and MultiFoXS: Single-state and multi-state structural modeling of proteins and their complexes based on SAXS profiles. *NAR* **44**, W424-429
32. **** Hammel, M.**, Yu, Y., Radhakrishnan, S. K., Chokshi, C., Tsai, M. S., Matsumoto, Y., Kuzdovich, M., Remesh, S. G., Fang, S., Tomkinson, A. E., Lees-Miller, S. P., and Tainer, J. A. (2016) An Intrinsically Disordered APLF Links Ku, DNA-PKcs and XRCC4-DNA Ligase IV in an Extended Flexible Non-Homologous End Joining Complex. *JBC* **291**, 26987-267006
33. Hashiguchi, T., Fusco, M. L., Bornholdt, Z. A., Lee, J. E., Flyak, A. I., Matsuoka, R., Kohda, D., Yanagi, Y., **Hammel, M.**, Crowe, J. E., Jr., and Saphire, E. O. (2015) Structural basis for marburg virus neutralization by a cross-reactive human antibody. *Cell* **160**, 904-912
34. ***** Dyer, K. N., Hammel, M., Rambo, R. P., Tsutakawa, S. E., Rodic, I., Classen, S., Tainer, J. A., and Hura, G. L. (2014) High-throughput SAXS for the characterization of biomolecules in solution: a practical approach. Methods Mol Biol 1091, 245-258**

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36. Lin, C. S., Chao, S. Y., **Hammel, M.**, Nix, J. C., Tseng, H. L., Tsou, C. C., Fei, C. H., Chiou, H. S., Jeng, U. S., Lin, Y. S., Chuang, W. J., Wu, J. J., and Wang, S. (2014) Distinct structural features of the peroxide response regulator from group a streptococcus drive DNA binding. *PLoS One* **9**, e89027
37. Pieper, U., Webb, B. M., Dong, G. Q., Schneidman-Duhovny, D., Fan, H., Kim, S. J., Khuri, N., Spill, Y. G., Weinkam, P., **Hammel, M.**, Tainer, J. A., Nilges, M., and Sali, A. (2014) ModBase, a database of annotated comparative protein structure models and associated resources. *NAR* **42**, D336-346
(cited 148)
38. Zhao, W., Saro, D., **Hammel, M.**, Kwon, Y., Xu, Y., Rambo, R. P., Williams, G. J., Chi, P., Lu, L., Pezza, R. J., Camerini-Otero, R. D., Tainer, J. A., Wang, H. W., and Sung, P. (2014) Mechanistic insights into the role of Hop2-Mnd1 in meiotic homologous DNA pairing. *NAR* **42**, 906-917
39. Williams, G. J., **Hammel, M.**, Radhakrishnan, S. K., Ramsden, D., Lees-Miller, S. P., and Tainer, J. A. (2014) Structural insights into NHEJ: building up an integrated picture of the dynamic DSB repair super complex, one component and interaction at a time. *DNA Repair (Amst)* **17**, 110-120
40. Mahaney, B. L., **Hammel, M.**, Meek, K., Tainer, J. A., and Lees-Miller, S. P. (2013) XRCC4 and XLF form long helical protein filaments suitable for DNA end protection and alignment to facilitate DNA double strand break repair. *Biochem Cell Biol* **91**, 31-41
41. Classen, S., Hura, G. L., Holton, J. M., Rambo, R. P., Rodic, I., McGuire, P. J., Dyer, K., **Hammel, M.**, Meigs, G., Frankel, K. A., and Tainer, J. A. (2013) Implementation and performance of SIBYLS: a dual endstation small-angle X-ray scattering and macromolecular crystallography beamline at the Advanced Light Source. *J Appl Crystallogr* **46**, 1-13
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44. Schneidman-Duhovny, D., ***Hammel, M.**, Tainer, J. A., and Sali, A. (2013) Accurate SAXS Profile Computation and its Assessment by Contrast Variation Experiments. *Biophys J* **105**, 962-974
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52. Schneidman-Duhovny, D., **Hammel, M.**, and Sali, A. (2011) Macromolecular docking restrained by a small angle X-ray scattering profile. *Journal of Structural Biology* **173**, 461-471
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54. Taherbhoy, A. M., Tait, S. W., Kaiser, S. E., Williams, A. H., Deng, A., Nourse, A., **Hammel, M.**, Kurinov, I., Rock, C. O., Green, D. R., and Schulman, B. A. (2011) Atg8 transfer from Atg7 to Atg3: a distinctive E1-E2 architecture and mechanism in the autophagy pathway. *Molecular Cell* **44**, 451-461
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