Ning Gao

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Research Interests

Methodological development of cryo-EM and its application in understanding the functions and mechanisms of various molecular machines; structural study of ribosome biogenesis and translation regulation; structural study of eukaryotic DNA replication.

Professional Positions:

2017/04 – present	Professor, School of Life Sciences, Peking University
2008/12 – 2017/03	Assistant Professor, Associate Professor with tenure, Full Professor, School of Life Sciences, Tsinghua University
2007/01 – 2008/12	Research Associate, Howard Hughes Medical Institute, Columbia University Medical Center, New York, NY (2008/04-2008/12); Howard Hughes Medical Institute, Wadsworth Center, Albany, NY (2007/01-2008/03)
2006/08 – 2006/12	Research Affiliate, Health Research Inc., Wadsworth Center, Albany, New York
2001/08 – 2006/07	Graduate Research Assistant, Department of Biomedical Sciences, State University of New York at Albany, NY.
1999/09 – 2000/07	Undergraduate Research Assistant, Institute of Developmental Biology, Chinese Academy of Sciences, Beijing, China. Advisor: Dr. Fang Zhang and Dr. Naihu Wu.

Education:

2001 – 2006	Ph.D. candidate in the Department of Biomedical Sciences, State University of New York at Albany, Albany, New York. Advisor: Dr. Joachim Frank. Received Ph.D. degree in 2006.

1996 – 2000 Department of Biochemistry and Molecular Biology, College of Life Sciences, Peking University, China. Received B.S. degree in 2000.

Publication (# corresponding author):

1. Li, N., Lam, W.H., Zhai, Y.#, Cheng, J., Cheng, E., Zhao, Y., **Gao, N.#,** and Tye, B.K.# (2018). Structure of the origin recognition complex bound to DNA replication origin. ***Nature*** 559, 217-222
2. Liang, K., Li, N., Wang, X., Dai, J., Liu, P., Wang, C., Chen, X.W., **Gao, N.**, and Xiao, J. (2018). Cryo-EM structure of human mitochondrial trifunctional protein. ***Proceedings of the National Academy of Sciences of the United States of America*** 10.1073/pnas.1801252115.
3. Yuan, Y., Du, C., Sun, C., Zhu, J., Wu, S., Zhang, Y., Ji, T., Lei, J., Yang, Y., **Gao, N.#**, and Nie, G.# (2018). Chaperonin-GroEL as a Smart Hydrophobic Drug Delivery and Tumor Targeting Molecular Machine for Tumor Therapy. ***Nano Lett*** 18, 921-928.
4. Yu, J., Zhang, B., Zhang, Y., Xu, C.Q., Zhuo, W., Ge, J., Li, J., **Gao, N.#**, Li, Y.#, and Yang, M.# (2018). A binding-block ion selective mechanism revealed by a Na/K selective channel. ***Protein & Cell*** 9, 629-639.
5. Li, Z., Ge, X., Zhang, Y., Zheng, L., Sanyal, S.#, and **Gao, N.**# (2018). Cryo-EM structure of Mycobacterium smegmatis ribosome reveals two unidentified ribosomal proteins close to the functional centers. ***Protein & Cell*** 9, 384-388.
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7. Zhang, Y., Xiao, Z., Zou, Q., Fang, J., Wang, Q., Yang, X.#, and **Gao, N.#** (2017). Ribosome Profiling Reveals Genome-wide Cellular Translational Regulation upon Heat Stress in Escherichia coli. ***Genomics, Proteomics & Bioinformatics*** 15, 324-330.
8. Zhai, Y.#, Li, N., Jiang, H., Huang, X., **Gao, N.#,** and Tye, B.K.# (2017). Unique Roles of the Non-identical MCM Subunits in DNA Replication Licensing. ***Molecular Cell*** 67, 168-179.
9. Li, Z., Guo, Q., Zheng, L., Ji, Y., Xie, Y.-T., Lai, D.-H., Lun, Z.-R., Suo, X., and **Gao, N.**# (2017). Cryo-EM structures of the 80S ribosomes from human parasites Trichomonas vaginalis and Toxoplasma gondii. ***Cell Research*** 27, 1275-1288.
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11. Biedka, S., Wu, S., LaPeruta, A.J., **Gao, N.**, and Woolford, J.L., Jr. (2017). Insights into remodeling events during eukaryotic large ribosomal subunit assembly provided by high-resolution cryo-EM structures. ***RNA Biol***, Mar 7:1-8. online publication
12. Ma, C., Kurita, D., Li, N., Chen, Y., Himeno, H.#, and **Gao, N.#** (2017). Mechanistic insights into the alternative translation termination by ArfA and RF2. ***Nature*** 541, 550-553.
13. Ma, C., Wu, S., Li, N., Chen, Y., Yan, K., Li, Z., Zheng, L., Lei, J., Woolford, J.L., Jr.#, and **Gao, N.#** (2017). Structural snapshot of cytoplasmic pre-60S ribosomal particles bound by Nmd3, Lsg1, Tif6 and Reh1. ***Nat Struct Mol Biol*** 24, 214-220.
14. Zhai, Y., Cheng, E., Wu, H., Li, N., Yung, P.Y., **Gao, N.#**, and Tye, B.K.# (2017). Open-ringed structure of the Cdt1-Mcm2-7 complex as a precursor of the MCM double hexamer. ***Nat Struct Mol Biol*** 24, 300-308.
15. Li, N., Wu, J.X., Ding, D., Cheng, J., **Gao, N.#**, and Chen, L.# (2017). Structure of a Pancreatic ATP-Sensitive Potassium Channel. ***Cell*** 168, 101-110 e110.

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