

## Jikui Song

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### Education

- Ph.D., 2002, Biochemistry, University of Wisconsin-Madison, USA.
- M.S., 2001, Computer Sciences, University of Wisconsin-Madison, USA.
- M.S., 1997, Molecular Biology, Institute of Biophysics, Chinese Academy of Sciences, China.
- B.S., 1994, Chemical Physics, University of Science and Technology of China, China.

### Research Experience

- 2012– Assistant Professor, Department of Biochemistry, University of California, Riverside.
- 2007–2011 Senior Scientist (2010-2011)/Research Associate (2007-2010), Structural Biology Program, Memorial Sloan-Kettering Cancer Center, New York. “Investigation of molecular mechanisms underlying epigenetic regulation”.  
**Mentor: Dinshaw J Patel**
- 2002–2007 Assistant Researcher, NMR Team Leader (2005-2007), Center for Eukaryotic Structural Genomics, University of Wisconsin, Madison. “Protein structure-function investigation by NMR spectroscopy”. **Mentor: John L Markley**
- 1997–2002 Research Assistant, Department of Biochemistry, University of Wisconsin, Madison. “Structure-Function Investigation of Proteinases and Proteinase Inhibitors”. **Mentor: John L Markley**
- 1994–1997 Research Assistant, Biophysics Institute, Chinese Academy of Sciences, Beijing, P.R.China. “Study on the folding of N-terminal fragments of *Staphylococcal Nuclease* with various lengths”. **Mentor: Jinfeng Wang**

### Awards

- 2013-2015 Basil O’Connor Starter Scholar Research Award, March of Dimes Foundation  
2013 Robert T. Poe Faculty Development Grant, Chinese American Faculty Association of Southern California
- 2013-2014 Regents’ Faculty Fellowship, University of California, Riverside  
2014-2015 Hellman Fellowship, Hellman Family Foundation

2015-2018 March of Dimes Foundation  
2015-2016 California Cancer Research Coordination Committee Grant  
2015-2017 Kimmel Scholar, Sidney Kimmel Foundation for Cancer Research

## **Scientific Publications**

(\* These authors have contributed equally to this work)

1. Ma KW, Jiang S, Hawara E, Lee D, Pan S, Coaker G, **Song J**, Ma W. Two serine residues in *Pseudomonas syringae* effector HopZ1a are required for acetyltransferase activity and association with the host co-factor. *New Phytol.* 2015. In press.
2. Zhang ZM, Liu S, Lin K, Luo Y, Perry JJ, Wang Y, **Song J**. Crystal Structure of Human DNA Methyltransferase 1. *J. Mol. Biol.* 2015. In press.
3. Zhang W, Sankaran S, Gozani O, **Song J**. A Meier-Gorlin Syndrome Mutation Impairs the ORC1-Nucleosome Association. *ACS Chem. Biol.* 2015 10: 1176-80.
4. Zhang F, Paramasivam M, Cai Q, Dai X, Wang P, Lin K, **Song J**, Seidman MM, Wang Y. Arsenite binds to the RING finger domains of RNF20-RNF40 histone E3 ubiquitin ligase and inhibits DNA double-strand break repair. *J. Am. Chem. Soc.* 2014. 136:12884-7.
5. Ji D, Lin K, **Song J**, Wang Y. Effects of Tet-induced oxidation products of 5-methylcytosine on Dnmt1- and DNMT3a-mediated cytosine methylation. *Mol Biosyst.* 2014. 10:1749-52.
6. Jiang S, Yao J, Ma KW, Zhou H, Song J, He SY, Ma W. Bacterial effector activates jasmonate signaling by directly targeting JAZ transcriptional repressors. *PLoS Pathog.* 2013. 10:e1003715.
7. Cai L, Rothbart SB, Lu R, Xu B, Chen WY, Tripathy A, Rockowitz S, Zheng D, Patel DJ, Allis CD, Strahl BD, **Song J**<sup>#</sup>, Wang GG<sup>#</sup>. An H3K36 Methylation-Engaging Tudor Motif of Polycomb-like Proteins Mediates PRC2 Complex Targeting. *Mol. Cell* (2013) 49: 1-12. (<sup>#</sup> Corresponding authors)
8. Kuo AJ\*, **Song J**\*, Cheung P\*, Ishibe-Murakami S, Yamazoe S, Chen JK, Patel DJ, Gozani, O. ORC1 BAH domain links dimethylation of H4K20 to DNA replication licensing and Meier-Gorlin syndrome. *Nature.* 2012, 484(7392):115-9.
9. **Song J**, Teplova M, Ishibe-Murakami S, Patel, DJ. Structure-based Mechanistic Insights into DNMT1-mediated Maintenance DNA methylation. *Science.* 2012, 335(6069):709-712.
10. **Song J**, Rechko O, Bestor TH, Patel DJ. Structure of DNMT1-DNA complex reveals a role for autoinhibition in maintenance DNA methylation. *Science.* 2011, 331(6020):1036-40.
11. Teplova M, Malinina L, Darnell JC, **Song J**, Lu M, Abagyan R, Musunuru K, Teplova A, Burley SK, Darnell RB, Patel DJ. Protein-RNA and protein-protein recognition by dual KH1/2 domains of the neuronal splicing factor Nova-1. *Structure.* 2011, 19(7):930-44.

12. Teplova M, **Song J**, Gaw HY, Teplov A, Patel DJ. Structural insights into RNA recognition by the Alternate-splicing Regulator CUG Binding Protein 1. *Structure*. 2010, 18(10):1364-77.
13. Wang Z\*, **Song J\***, Milne TA, Wang GG, Li H, Allis CD, Patel DJ. Molecular Events Underlying MLL1 Regulation by H3K4me3 Readout and Cyclophilin-mediated Proline Isomerization. *Cell*. 2010, 141(7):1183-94.
14. Wang GG, **Song J**, Wang Z, Dormann HL, Casadio F, Li H, Luo JL, Patel DJ, Allis CD. Haematopoietic Malignancies Caused by Dysregulation of a Chromatin-binding PHD Finger. *Nature*. 2009, 459(7248): 847-51.
15. Qasim MA, **Song J**, Markley JL, Laskowski, M Jr. Cleavage of Peptide Bonds bearing Ionizable Amino Acid at P<sub>1</sub> by Serine Proteases with Hydrophobic S<sub>1</sub> Pocket. *Biochem Biophys Res Commun*. 2010, 400(4):507-10.
16. Chu UB, **Song J**, Mavlyutov TA, Guo LW. In Vitro Interaction of tubulin with the photoreceptor cGMP phosphodiesterase  $\gamma$ -subunit. *Neurosci Lett*. 2010, 482(3):225-229.
17. Lytle BL, **Song J**, de la Cruz NB, Peterson FC, Johnson KA, Bingman CA, Phillips GN Jr, Volkman BF. Structures of Two Arabidopsis Thaliana Major Latex Proteins Represent Novel Helix-grip Folds. *Proteins*. 2009, 76(1):237-43.
18. **Song J\***, McGivern JV\*, Nichols KW, Markley JL, Sheets MD. Structural basis for RNA recognition by a type II poly(A)-binding protein. *Proc. Natl. Acad. Sci.* 2008, 105(40):15317-22.
19. **Song J**, Bettendorff L., Tonelli, M., Markley JL. Structural Basis for the Catalytic Mechanism of Mammalian 25 kDa Thiamine Triphosphatase. *J Biol Chem*. 2008, 283(16):10939-48.
20. **Song J\***, Guo LW\*, Muradov H, Artemyev NO, Ruoho AE, Markley JL. Intrinsically disordered  $\gamma$  subunit of cGMP phosphodiesterase encodes functional relevant transient secondary and tertiary structures. *Proc. Natl. Acad. Sci.* 2008, 105(5):1505-10.
21. Frederick RO, Bergeman L, Blommel PG, Bailey LJ, McCoy JG, **Song J**, Meske L, Bingman CA, Riters M, Dillon NA, Kunert J, Yoon JW, Lim A, Cassidy M, Bunge J, Aceti DJ, Primm JG, Markley JL, Phillips GN Jr, Fox BG. Small-scale, semi-automated purification of eukaryotic proteins for structure determination. *J Struct Funct Genomics*. 2007, 8(4):153-66.
22. Phillips GN Jr., Fox BG, Markley JL, Volkman BF, Bae E, Bitto E, Bingman CA, Frederick RO, Lytle BL, McCoy JG, Pierce BS, **Song J**, Twigger SN. Structures of Proteins of Biomedical Interest from the Center for Eukaryotic Structural Genomics. *J Struct Funct Genomics*. 2007, 8(2-3):73-84.
23. **Song J**, Zhao Q, Vinarov DA, Loushin Newman C, Markley JL. Solution structure of human sorting nexin 22. *Protein Sci*. 2007, 16(5):807-14.
24. **Song J**, Markley JL. Cautionary Tail: the presence of an N-terminal tag on dynein light-chain roadblock/LC7 affects its interaction with a functional partner. *Protein Pept Lett*. 2007, 14(3):265-268.

25. **Song J**, Markley JL. Three-dimensional structure determined for a subunit of human tRNA splicing endonuclease (Sen15) reveals a novel dimeric fold. *J Mol Biol.* 2007, 366(1):155-164.
26. **Song J**, Lee MS, Carlberg I, Vener AV, Markley JL. Micelle-induced folding of spinach thylakoid soluble phosphoprotein of 9 kDa and its functional implications. *Biochemistry.* 2006, 45 (51): 15633-15643.
27. Lin I, Chen Y, Fee, JA, **Song J**, Westler WM, Markley JL. Rieske protein from *Thermus thermophilus*: <sup>15</sup>N NMR titration study demonstrates the role of ion-ligated histidines in the pH dependence of the reduction potential. *J Am Chem Soc.* 2006, 128(33):10672-10673.
28. **Song J**, Tyler RC, Lee MS, Tyler EM, Markley JL. Solution structure of isoform 1 of Roadblock/LC7, a light chain in the dynein complex. *J Mol Biol.* 2005, 354(5):1043-1051.
29. **Song J**, Tyler RC, Wrobel RL, Frederick RO, Vojtek FC, Jeon WB, Lee MS, Markley JL. Solution structure of At3g04780.1-des15, an *Arabidopsis thaliana* ortholog of the C-terminal domain of human thioredoxin like protein. *Protein Sci.* 2005, 14(4):1059-63.
30. **Song J**, Zhao Q, Lee MS, Markley JL. <sup>1</sup>H, <sup>15</sup>N and <sup>13</sup>C resonance assignments of the putative Bet v 1 family protein At1g24000.1 from *Arabidopsis thaliana*. *J Biomol NMR.* 2005, 32(4):335.
31. Zhao Q, **Song J**, Jin Z, Danilova V, Hellekant G, Markley JL. Probing the sweet determinants of brazzein: wild type brazzein and a tasteless variant, brazzein-ins(R18a-I18b), exhibit different pH-dependent NMR chemical shifts. *Biochem Biophys Res Commun.* 2005, 335(1):256-263.
32. Fox BG, Malone TE, Johnson KA, Madson SE, Aceti D, Bingman CA, Blommel PG, Buchan B, Burns B, Cao J, Cornilescu C, Doreleijers J, Ellefson J, Frederick R, Geetha H, Hruby D, Jeon WB, Kimball T, Kunert J, Markley JL, Newman C, Olson A, Peterson FC, Phillips GN Jr, Primm J, Ramirez B, Rosenberg NS, Runnels M, Seder K, Shaw J, Smith DW, Sreenath H, **Song J**, Sussman MR, Thao S, Troestler D, Tyler E, Tyler R, Ulrich E, Vinarov D, Vojtik F, Volkman BF, Wesenberg G, Wrobel RL, Zhang J, Zhao Q, Zolnai Z. X-ray structure of Arabidopsis At1g77680, 12-oxophytodienoate reductase isoform 1. *Proteins.* 2005, 61(1):206-8.
33. Tyler RC, Aceti DJ, Bingman CA, Cornilescu CC, Fox BG, Frederick RO, Jeon WB, Lee MS, Newman CS, Peterson FC, Phillips GN Jr, Shahan MN, Singh S, **Song J**, Sreenath HK, Tyler EM, Ulrich EL, Vinarov DA, Vojtik FC, Volkman BF, Wrobel RL, Zhao Q, Markley JL. Comparison of cell-based and cell-free protocols for producing target proteins from the Arabidopsis thaliana genome for structural studies. *Proteins.* 2005, 59(3):633-43.
34. **Song J**, Zhao Q, Thao S, Friederick, RO, and Markley JL. Solution Structure of a Calmodulin-Like Calcium-Binding Domain from *Arabidopsis thaliana*. *J Biomol NMR.* 2004, 30(4):451-6.

35. **Song J**, Vinarov, DA, Tyler EM, Shahan MN, Tyler RC, and Markley, JL Hypothetical Protein At2g24940.1 from *Arabidopsis thaliana* Adopts a Cytochrome b5 like Fold. *J Biomol NMR*. 2004, 30(2):215-8.
36. **Song J**, Qasim MA, Laskowski M Jr., Markley JL. Two Conformational States of Turkey Ovomuroid at Low pH: Three-Dimensional Structures, Internal Dynamics, and Interconversion Kinetics and Thermodynamics. *Biochemistry*. 2003, 42(21):6380-6391.
37. **Song J**, Markley JL. Protein Inhibitors of Serine Proteinases: Role of Backbone Structure and Dynamics in Controlling the Hydrolysis Constant. *Biochemistry*. 2003, 42(18):5186-5194.
38. **Song J**, Laskowski M Jr, Qasim MA., Markley JL. NMR Determination of pK<sub>a</sub> Values for Asp, Glu, His, and Lys Mutants at each Variable Contiguous Enzyme-Inhibitor Contact Position of Turkey Ovomuroid Third Domain. *Biochemistry*. 2003, 42(10):2847-2856.
39. **Song J**, Markley J.L. NMR chemical shift mapping of the binding site of a protein proteinase inhibitor: changes in the (1)H, (13)C and (15)N NMR chemical shifts of turkey ovomuroid third domain upon binding to bovine chymotrypsin A(alpha). *J Mol Recognit*. 2001, 14(3):166-71.
40. Hemmi H, Studts, JM, Chae YK, **Song J**, Markley JL, Fox BG. Solution structure of the toluene 4-monooxygenase effector protein (T4moD). *Biochemistry*. 2001, 40(12):3512-24.
41. Qasim MA, Lu SM, Ding J, Bateman KS, James MN, Anderson S, **Song J**, Markley JL, Ganz PJ, Saunders CW, Laskowski M Jr. Thermodynamic criterion for the conformation of P1 residues of substrates and of inhibitors in complexes with serine proteinases. *Biochemistry*. 1999, 38(22):7142-50.
42. **Song J**, Dai J, Jing G, Wang J. Study on Folding of N-Terminal Fragments of SnaseR. *Acta Biophysica Sinica* 1997, 13(4):545-550.

## **Book Chapter**

1. Wrobel RL, Bingman CA, Jeon WB, **Song J**, Vinarov DA, Frederick RO, Aceti DJ, Sreenath HK, Zolnai Z, Vojtik FC, Fox BG, Phillips GN Jr., and Markley JL. (2006) Structural Proteomics. *Plant Proteomics*, 99-128. Blackwell Publishing, Oxford.