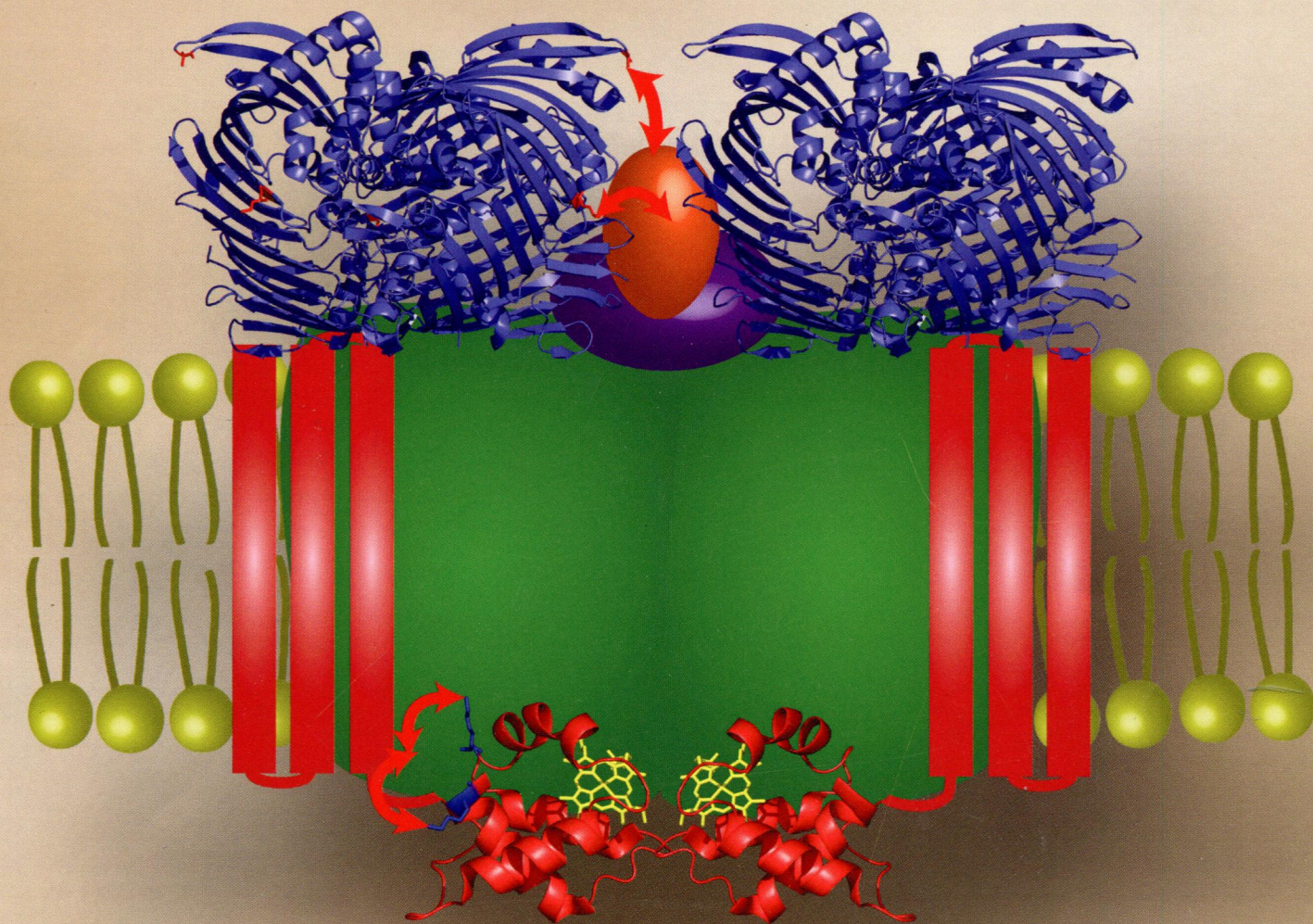


# BIOCHEMISTRY

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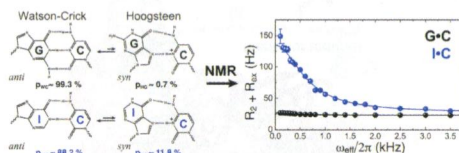
**ON THE COVER:** The photosynthetic apparatus of the anoxygenic photosynthetic green sulfur bacterium *Chlorobaculum tepidum* includes the reaction center core (RCC) complex and the FMO antenna protein. The RCC complex is an FeS-type (type I) reaction center, which is composed of a homodimeric core structure formed by two PscA proteins, PscB Fe-S protein, a cytochrome  $c_{551}$  (PscC) protein, and a PscD protein. A structural model of the FMO/RCC complex is proposed on the basis of chemical cross-linking results.

## Rapid Reports

7145 **S**

DOI: 10.1021/bi5011909

**Guanine to Inosine Substitution Leads to Large Increases in the Population of a Transient G•C Hoogsteen Base Pair**  
Evgenia N. Nikolova, Frederick Stull, and Hashim M. Al-Hashimi\*



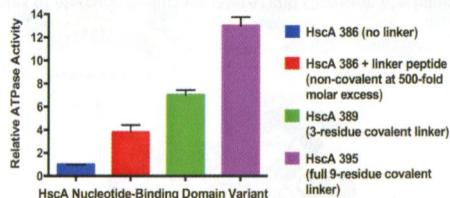
## Accelerated Publications

7148 **S**

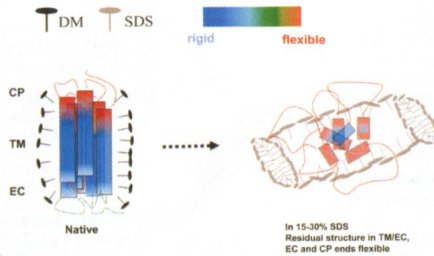
DOI: 10.1021/bi5010552

**The Specialized Hsp70 (HscA) Interdomain Linker Binds to Its Nucleotide-Binding Domain and Stimulates ATP Hydrolysis in Both *cis* and *trans* Configurations**

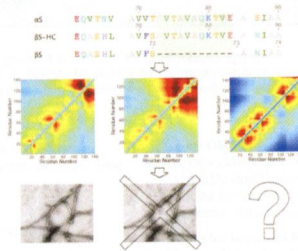
T. Reid Alderson, Jin Hae Kim, Kai Cai, Ronnie O. Frederick, Marco Tonelli, and John L. Markley\*



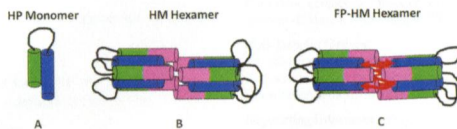
7160 DOI: 10.1021/bi401557e  
**Differential Dynamics of Extracellular and Cytoplasmic Domains in Denatured States of Rhodopsin**  
 Arpana Dutta, Christian Altenbach, Sheryll Mangahas, Naveena Yanamala, Eric Gardner, Wayne L. Hubbell, and Judith Klein-Seetharaman\*



7170 DOI: 10.1021/bi5009326  
**A Relationship between the Transient Structure in the Monomeric State and the Aggregation Propensities of  $\alpha$ -Synuclein and  $\beta$ -Synuclein**  
 Jane R. Allison,\* Robert C. Rivers, John C. Christodoulou, Michele Vendruscolo,\* and Christopher M. Dobson\*

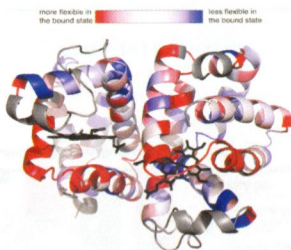


7184 DOI: 10.1021/bi501159w  
**Folded Monomers and Hexamers of the Ectodomain of the HIV gp41 Membrane Fusion Protein: Potential Roles in Fusion and Synergy Between the Fusion Peptide, Hairpin, and Membrane-Proximal External Region**  
 Koyeli Banerjee and David P. Weliky\*



Insight into the Allosteric Mechanism of *Scapharca* Dimeric Hemoglobin

Jennifer M. Laine, Miguel Amat, Brittany R. Morgan, William E. Royer Jr., and Francesca Massi\*

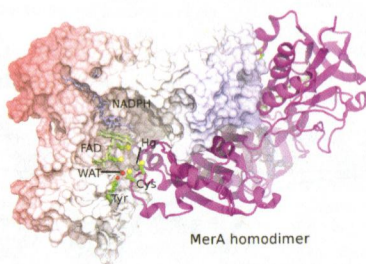


7211 5

DOI: 10.1021/bi500608u

X-ray Structure of a  $\text{Hg}^{2+}$  Complex of Mercuric Reductase (MerA) and Quantum Mechanical/Molecular Mechanical Study of  $\text{Hg}^{2+}$  Transfer between the C-Terminal and Buried Catalytic Site Cysteine Pairs

Peng Lian, Hao-Bo Guo, Demian Riccardi, Aiping Dong, Jerry M. Parks, Qin Xu, Emil F. Pai, Susan M. Miller,\* Dong-Qing Wei, Jeremy C. Smith,\* and Hong Guo\*

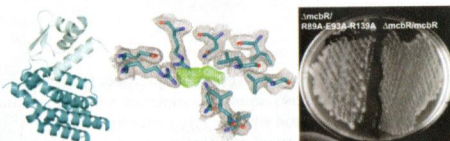


7223 5

DOI: 10.1021/bi500871a

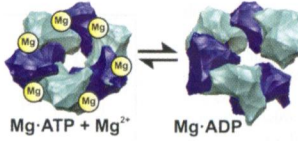
## McbR/YncC: Implications for the Mechanism of Ligand and DNA Binding by a Bacterial GntR Transcriptional Regulator Involved in Biofilm Formation

Dana M. Lord, Ayse Uzgoren Baran, Valerie W. C. Soo, Thomas K. Wood, Wolfgang Peti, and Rebecca Page\*



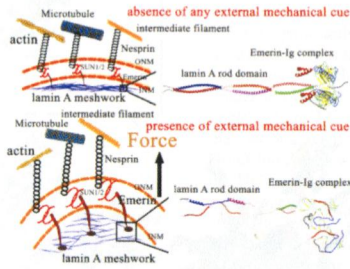
### ATP and Magnesium Promote Cotton Short-Form Ribulose-1,5-bisphosphate Carboxylase/Oxygenase (Rubisco) Activase Hexamer Formation at Low Micromolar Concentrations

Agnieszka M. Kuriata, Manas Chakraborty, J. Nathan Henderson, Suratna Hazra, Andrew J. Serban, Tuong V. T. Pham, Marcia Levitus, and Rebekka M. Wachter\*



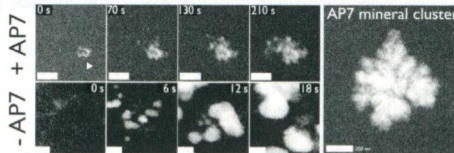
### Characterization of Unfolding Mechanism of Human Lamin A Ig Fold by Single-Molecule Force Spectroscopy—Implications in EDMD

Manindra Bera, Hema Chandra Kotamarthi, Subarna Dutta, Angana Ray, Saptarni Ghosh, Dhananjay Bhattacharyya, Sri Rama Koti Ainavarapu, and Kaushik Sengupta\*



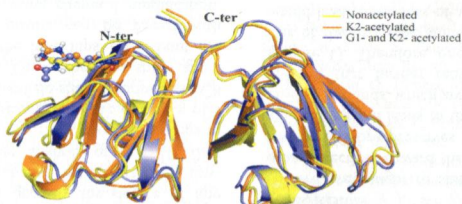
### An Oligomeric C-RING Nacre Protein Influences Prenucleation Events and Organizes Mineral Nanoparticles

Iva Perovic, Andreas Verch, Eric P. Chang, Ashit Rao, Helmut Cölfen, Roland Kröger, and John Spencer Evans\*

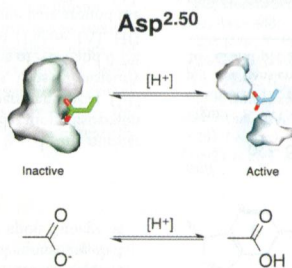


**Acetylation of Gly1 and Lys2 Promotes Aggregation of Human  $\gamma$ D-Crystallin**

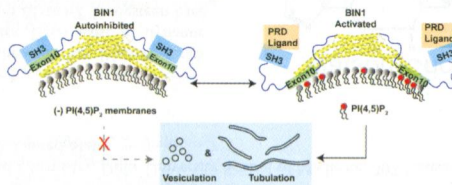
Michael A. DiMauro, Sandip K. Nandi, Cibin T. Raghavan, Rajiv Kumar Kar, Benlian Wang, Anirban Bhunia, Ram H. Nagaraj,\* and Ashis Biswas\*

**Insights into the Role of Asp79<sup>2.50</sup> in  $\beta_2$  Adrenergic Receptor Activation from Molecular Dynamics Simulations**

Anirudh Ranganathan, Ron O. Dror, and Jens Carlsson\*

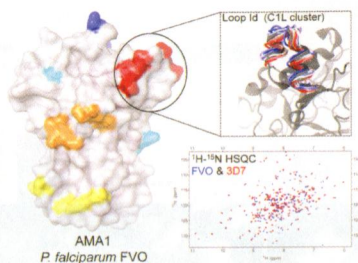
**BIN1 Membrane Curvature Sensing and Generation Show Autoinhibition Regulated by Downstream Ligands and PI(4,5)P<sub>2</sub>**

Tingting Wu and Tobias Baumgart\*



**Structure and Dynamics of Apical Membrane Antigen 1 from *Plasmodium falciparum* FVO**

San Sui Lim, Wei Yang, Bankala Krishnarjuna, Komagal Kannan Sivaraman, Indu R. Chandrashekar, Itamar Kass, Christopher A. MacRaild, Shane M. Devine, Cael O. Debono, Robin F. Anders, Martin J. Scanlon, Peter J. Scammells, Raymond S. Norton,\* and Sheena McGowan\*

**Biochemical, Mechanistic, and Spectroscopic Characterization of Metallo- $\beta$ -lactamase VIM-2**

Mahesh Aitha, Amy R. Marts, Alex Bergstrom, Abraham Jon Møller, Lindsay Moritz, Lucien Turner, Jay C. Nix, Robert A. Bonomo, Richard C. Page, David L. Tierney, and Michael W. Crowder\*

