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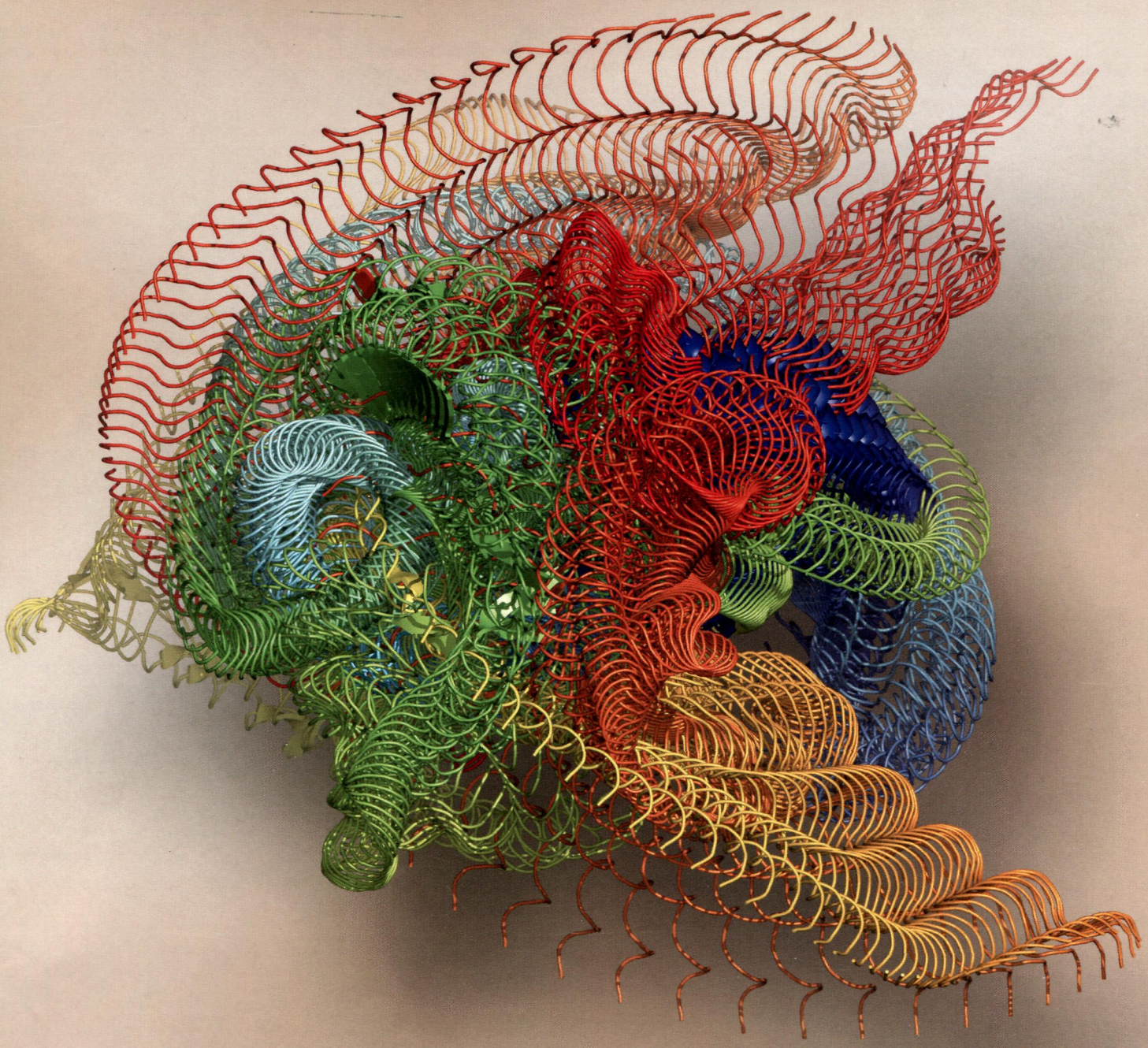

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DECEMBER 3, 2013
VOLUME 52 ISSUE 48

BICHAW 52(48) 8601−8786 (2013)
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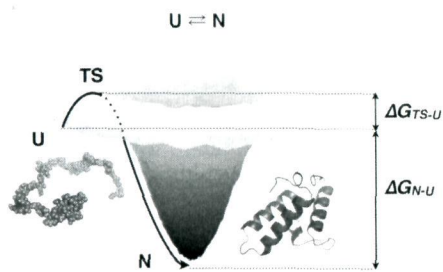
ON THE COVER: Pictured is an overlay of 300 states of oxidized cytochrome *c*, starting from the "native" fully folded state to an unfolded state. Soffer et al. describe a previously unseen frustrated state of this protein produced under conditions that promote a misfolded ligation state of the heme iron. This image was rendered using PyMol (Schrödinger, LLC) [Soffer, J. B., et al. (2013) *Biochemistry* 52, 1397−1408].

Current Topics

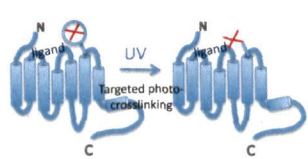
8601 dx.doi.org/10.1021/bi4001529

Computational and Theoretical Methods for Protein Folding
Mario Compiani* and Emidio Capriotti*



8625 dx.doi.org/10.1021/bi401300y

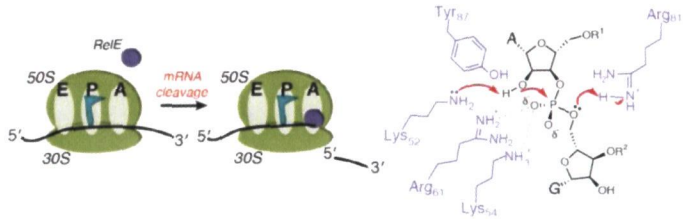
Probing G Protein-Coupled Receptor—Ligand Interactions with Targeted Photoactivatable Cross-Linkers
Amy Grunbeck and Thomas P. Sakmar*



Accelerated Publications

8633 S dx.doi.org/10.1021/bi401325c

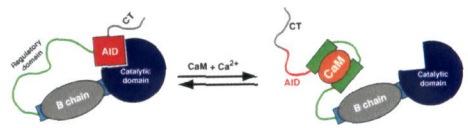
Bacterial Toxin RelE: A Highly Efficient Ribonuclease with Exquisite Substrate Specificity Using Atypical Catalytic Residues
Meghan A. Griffin, Jared H. Davis, and Scott A. Strobel*



Articles

8643 dx.doi.org/10.1021/bi400483a

The Distal Helix in the Regulatory Domain of Calcineurin Is Important for Domain Stability and Enzyme Function
Tori B. Dunlap, Erik C. Cook, Julie Rumi-Masante, Hannah G. Arvin, Terrence E. Lester, and Trevor P. Creamer*



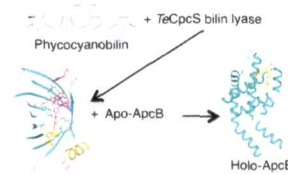
8652 S dx.doi.org/10.1021/bi4010039

Quinine Binding by the Cocaine-Binding Aptamer. Thermodynamic and Hydrodynamic Analysis of High-Affinity Binding of an Off-Target Ligand
Oren Reinstein, Mina Yoo, Chris Han, Tsering Palmo, Simone A. Beckham, Matthew C. J. Wilce, and Philip E. Johnson*

Credit: Ella Galpern

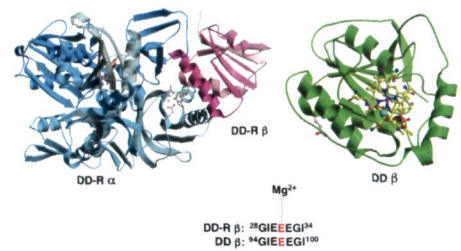
8663 S dx.doi.org/10.1021/bi401192z

Structural and Biochemical Characterization of the Bilin Lyase CpcS from *Thermosynechococcus elongatus*
Christina M. Kronfel, Alexandre P. Kuzin, Farhad Forouhar, Avijit Biswas, Min Su, Scott Lew, Jayaraman Seetharaman, Rong Xiao, John K. Everett, Li-Chung Ma, Thomas B. Acton, Gaetano T. Montelione, John F. Hunt, Corry E. C. Paul, Tierna M. Dragomani, M. Nazim Boutaghou, Richard B. Cole, Christian Riml, Richard M. Alvey, Donald A. Bryant, and Wendy M. Schluchter*



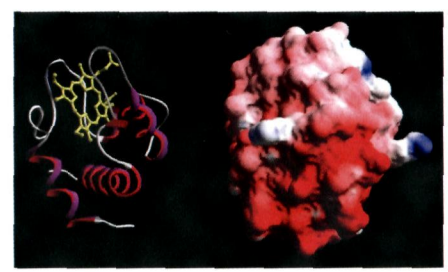
8677 dx.doi.org/10.1021/bi401290j

Essential Roles of Nucleotide-Switch and Metal-Coordinating Residues for Chaperone Function of Diol Dehydratase-Reactivase
*Koichi Mori, Koji Obayashi, Yasuhiro Hosokawa, Akina Yamamoto, Mayumi Yano, Toshiyuki Yoshinaga, and Tetsuo Toraya**



8687 S dx.doi.org/10.1021/bi401344f

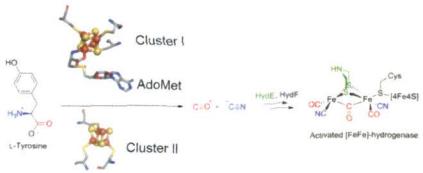
Photosystem I Reduction in Diatoms: As Complex as the Green Lineage Systems but Less Efficient
Pilar Bernal-Bayard, Fernando P. Molina-Heredia, Manuel Hervás, and José A. Navarro*



8696 S dx.doi.org/10.1021/bi401143s

Biochemical and Kinetic Characterization of Radical *S*-Adenosyl-L-methionine Enzyme HydG

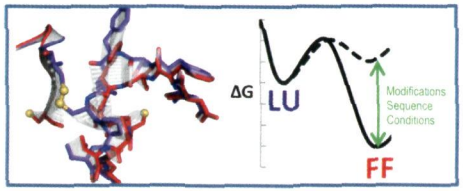
Rebecca C. Driesener, Benjamin R. Duffus, Eric M. Shepard, Ian R. Bruzas, Kaitlin S. Duschene, Natalie J.-R. Coleman, Alexander P. G. Marrison, Enrico Salvadori, Christopher W. M. Kay, John W. Peters, Joan B. Broderick, and Peter L. Roach*



8708 S dx.doi.org/10.1021/bi4011573

The Sensitive Balance between the Fully Folded and Locally Unfolded Conformations of a Model Peroxiredoxin

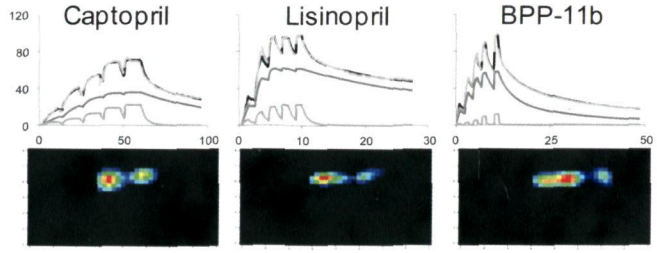
Arden Perkins, Kimberly J. Nelson, Jared R. Williams, Derek Parsonage, Leslie B. Poole, and P. Andrew Karplus*



8722 S dx.doi.org/10.1021/bi4006144

Surface Plasmon Resonance Analysis of the Binding Mechanism of Pharmacological and Peptidic Inhibitors to Human Somatic Angiotensin I-Converting Enzyme

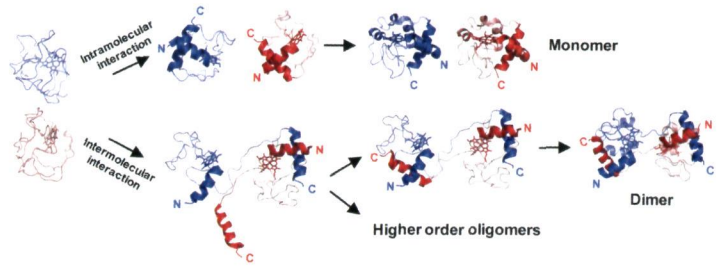
Faïza Zidane, Gabrielle Zeder-Lutz, Danièle Altschuh, Jean-Michel Girardet, Laurent Miclo, Catherine Corbier, and Céline Cakir-Kiefer*



8732 S dx.doi.org/10.1021/bi400986g

Formation of Oligomeric Cytochrome *c* during Folding by Intermolecular Hydrophobic Interaction between N- and C-Terminal α-Helices

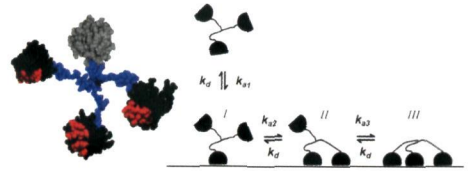
Partha Pratim Parui, Megha Subhash Deshpande, Satoshi Nagao, Hironari Kamikubo, Hirofumi Komori, Yoshiki Higuchi, Mikio Kataoka, and Shun Hirota*



8745 dx.doi.org/10.1021/bi401345b

Utilizing Avidity To Improve Antifreeze Protein Activity: A Type III Antifreeze Protein Trimer Exhibits Increased Thermal Hysteresis Activity

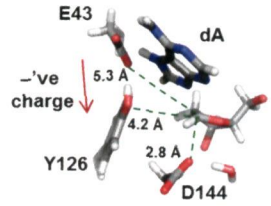
Özge Can and Nolan B. Holland*



8753 S dx.doi.org/10.1021/bi401310w

Standard Role for a Conserved Aspartate or More Direct Involvement in Deglycosylation? An ONIOM and MD Investigation of Adenine–DNA Glycosylase

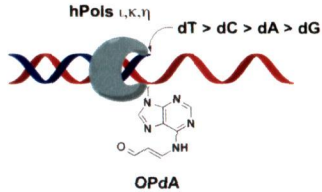
Jennifer L. Kellie, Katie A. Wilson, and Stacey D. Wetmore*



8766 dx.doi.org/10.1021/bi401103k

Replication, Repair, and Translesion Polymerase Bypass of N^6-Oxopropenyl-2′-deoxyadenosine

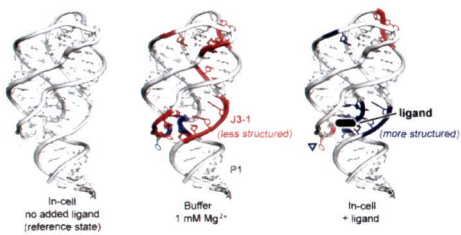
Leena Maddukuri, Sarah C. Shuck, Robert L. Eoff, Linlin Zhao, Carmelo J. Rizzo, F. Peter Guengerich, and Lawrence J. Marnett*



8777 Ⓢ dx.doi.org/10.1021/bi401207q

The Cellular Environment Stabilizes Adenine Riboswitch RNA Structure

Jillian Tyrrell, Jennifer L. McGinnis, Kevin M. Weeks,* and Gary J. Pielak*



Ⓢ Supporting Information available via online article