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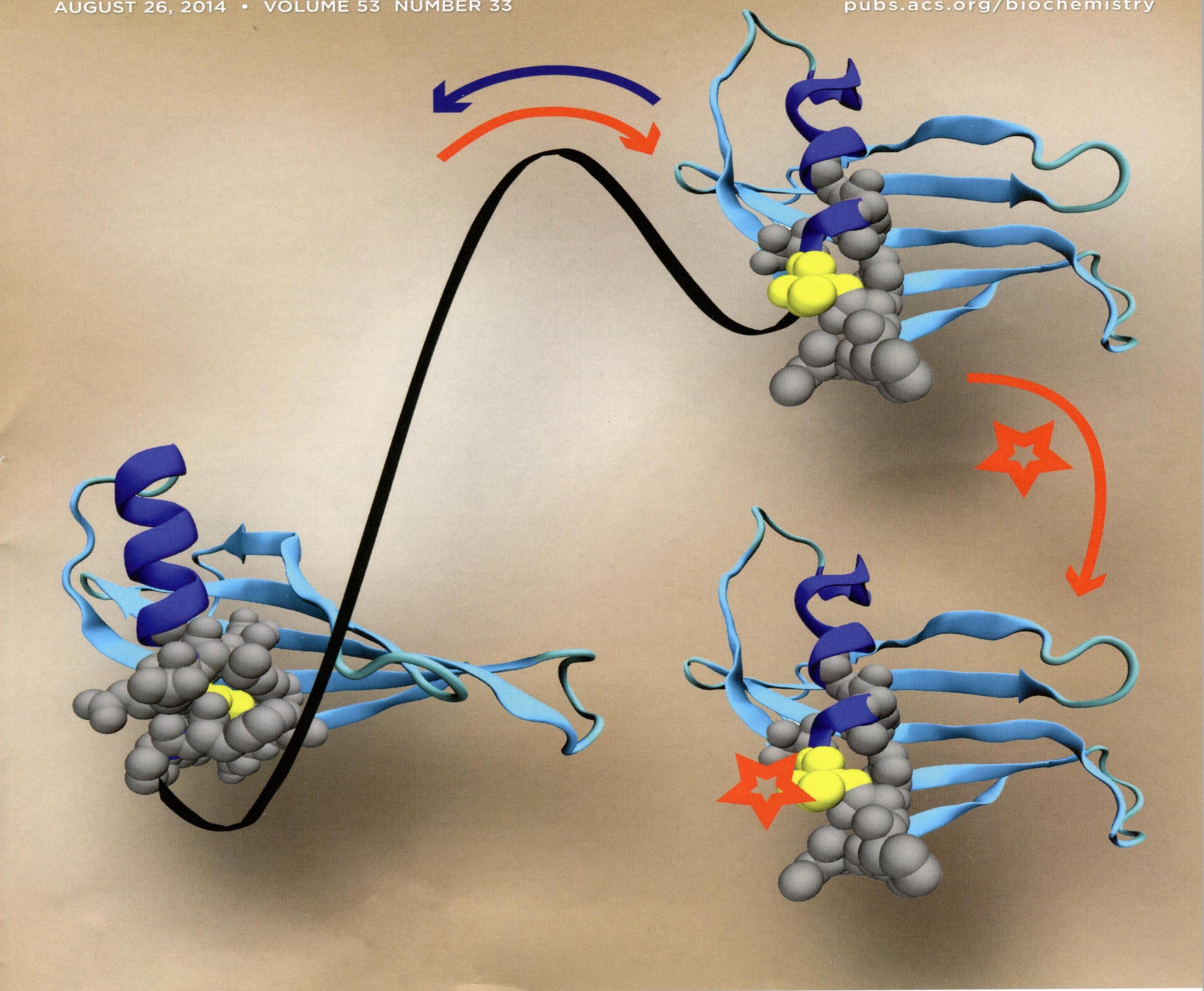

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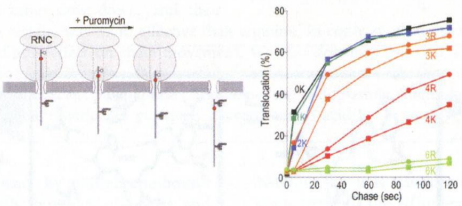
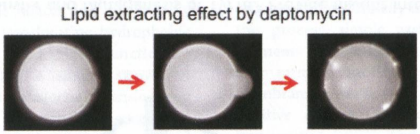
ON THE COVER: Thiol labeling of a single cysteine residue (yellow spheres) has been used to monitor rare unfolding events in a protein under nativelike conditions. The residues (gray spheres) surrounding the buried cysteine move apart, resulting in solvent exposure and hence labeling of the side chain thiol. This deprotection of the side chain is associated with an energy barrier between the native state and a partially unfolded, labeling-competent intermediate. Such intermediates have been mapped onto the unfolding energy landscape of the protein monellin using the kinetic and thermodynamic information obtained from thiol labeling. [Malhotra, P., and Udgaonkar, J. B. (2014) Biochemistry 53, 3608−3620]

Articles

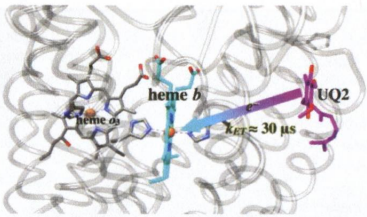




5393 dx.doi.org/10.1021/bi500567m

Kinetics and Intermediates of the Reaction of Fully Reduced *Escherichia coli* bo_3 Ubiquinol Oxidase with O_2

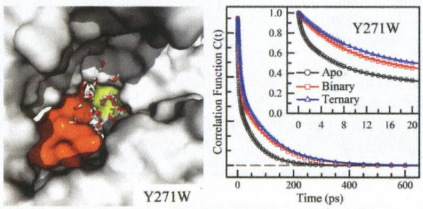
Istvan Szundi, Clive Kittredge, Sylvia K. Choi, William McDonald, Jayashree Ray, Robert B. Gennis, and Ólöf Einarsdóttir*



5405 S dx.doi.org/10.1021/bi500810a

Ultrafast Water Dynamics at the Interface of the Polymerase–DNA Binding Complex

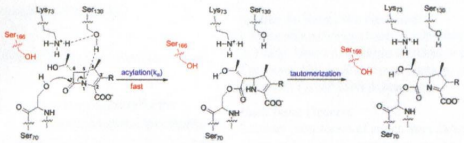
Yi Yang, Yangzhong Qin, Qing Ding, Marina Bakhtina, Lijuan Wang, Ming-Daw Tsai, and Dongping Zhong*



5414 dx.doi.org/10.1021/bi401609h

Perturbing the General Base Residue Glu166 in the Active Site of Class A β-Lactamase Leads to Enhanced Carbapenem Binding and Acylation

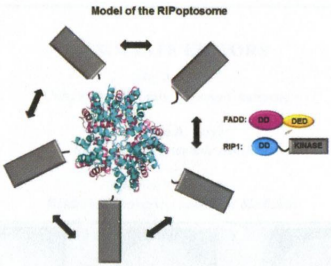
Xuehua Pan, Wai-Ting Wong, Yunjiao He, Yongwen Jiang, and Yanxiang Zhao*



5424 dx.doi.org/10.1021/bi500585u

Structural Study of the RIPoptosome Core Reveals a Helical Assembly for Kinase Recruitment

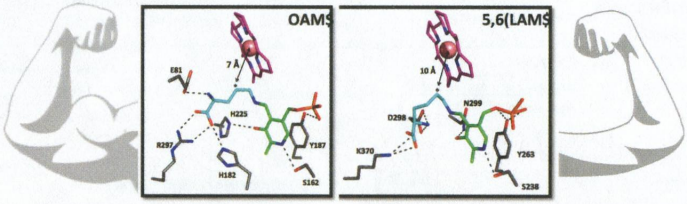
Tae-ho Jang, Chao Zheng, Jixi Li, Claire Richards, Yu-Shan Hsiao, Thomas Walz, Hao Wu, and Hyun Ho Park*



5432 dx.doi.org/10.1021/bi5006706

Isotope Effects for Deuterium Transfer and Mutagenesis of Tyr187 Provide Insight into Controlled Radical Chemistry in Adenosylcobalamin-Dependent Ornithine 4,5-Aminomutase

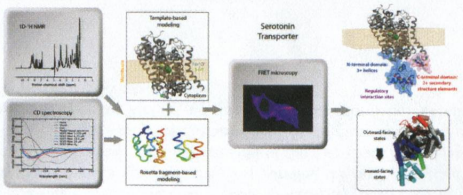
Caitlyn Makins, Doug A. Whitelaw, Changhua Mu, Charles J. Walsby, and Kirsten R. Wolthers*



5444 dx.doi.org/10.1021/bi500637f

Structure and Regulatory Interactions of the Cytoplasmic Terminal Domains of Serotonin Transporter

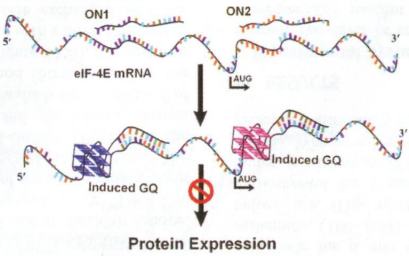
Cristina Fenollar-Ferrer, Thomas Stockner, Thomas C. Schwarz, Aritra Pal, Jelena Gotovina, Tina Hofmaier, Kumaresan Jayaraman, Suraj Adhikary, Oliver Kudlacek, Ahmad Reza Mehdipour, Sotiria Tavoulari, Gary Rudnick, Satinder K. Singh, Robert Konrat, Harald H. Sitte,* and Lucy R. Forrest*



5461 Ⓢ dx.doi.org/10.1021/bi5008904

Rationally Induced RNA:DNA G-Quadruplex Structures Elicit an Anticancer Effect by Inhibiting Endogenous eIF-4E Expression

Debmalya Bhattacharyya, Kim Nguyen, and Soumitra Basu*



Additions and Corrections

5471 dx.doi.org/10.1021/bi500938p

Correction to Intersubunit Salt Bridges with a Sulfate Anion Control Subunit Dissociation and Thermal Stabilization of *Bacillus* sp. TB-90 Urate Oxidase

Takao Hibi,* Yuta Hayashi, Harumi Fukada, Takafumi Itoh, Tomohiro Nago, and Yoshiaki Nishiya

5472 dx.doi.org/10.1021/bi5010156

Correction to Nox4: A Hydrogen Peroxide-Generating Oxygen Sensor

Yukio Nisimoto, Becky A. Diebold, Daniela Cosentino-Gomes, and J. David Lambeth*

Ⓢ Supporting Information available via online article