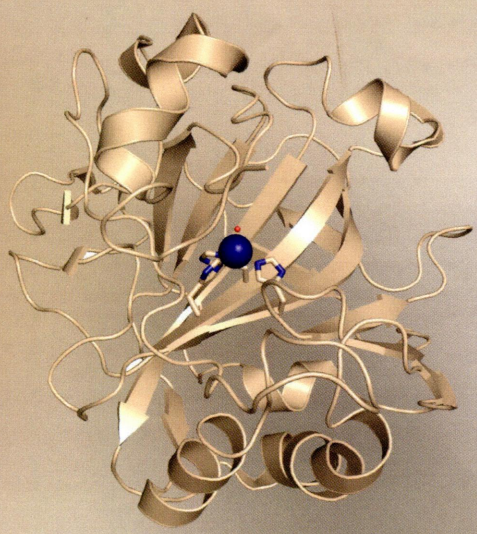
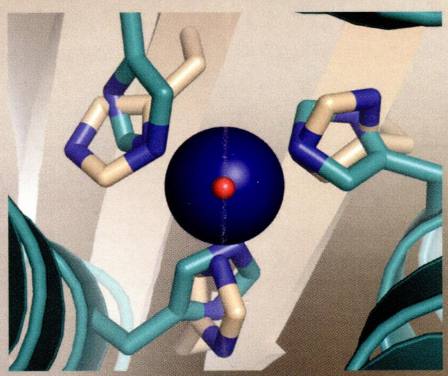
# BIOCHEMISTRY

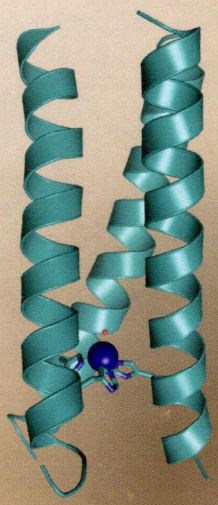
including biophysical chemistry & molecular biology

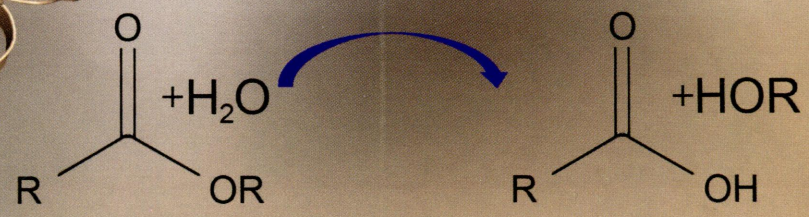
MAY 20, 2014 • VOLUME 53 NUMBER 19

pubs.acs.org/biochemistry









# BIOCHEMISTRY
including biophysical chemistry & molecular biology

MAY 20, 2014
VOLUME 53 ISSUE 19

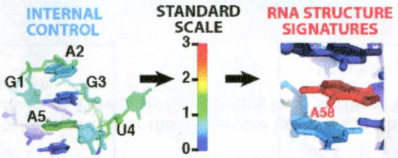
BICHAW 53(19) 3063–3260 (2014)
ISSN 0006-2960
Registered in the U.S. Patent and Trademark Office



**ON THE COVER:** Using de novo and redesign approaches toward the preparation of structural and functional models of hydrolytic zinc metalloenzymes. [Zastrow, M. L., and Pecoraro, V. L. (2014) *Biochemistry 53*, 957–978]

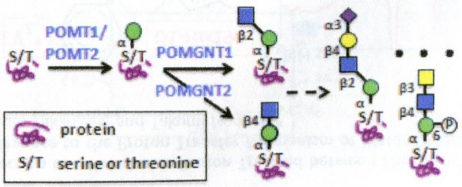
## Rapid Reports






## Current Topics



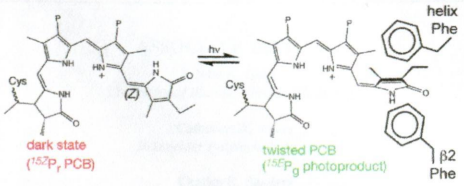


# Articles

3118 dx.doi.org/10.1021/bi500037a

**Conserved Phenylalanine Residues Are Required for Blue-Shifting of Cyanobacteriochrome Photoproducts**

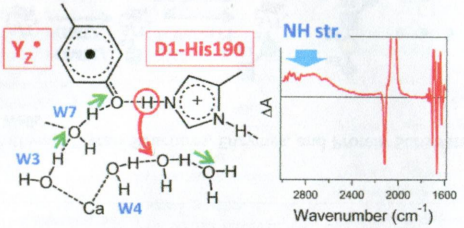
Nathan C. Rockwell, Shelley S. Martin, Alexander G. Gulevich, and J. Clark Lagarias*




3131 dx.doi.org/10.1021/bi500237y

**Fourier Transform Infrared Detection of a Polarizable Proton Trapped between Photooxidized Tyrosine $Y_Z$ and a Coupled Histidine in Photosystem II: Relevance to the Proton Transfer Mechanism of Water Oxidation**

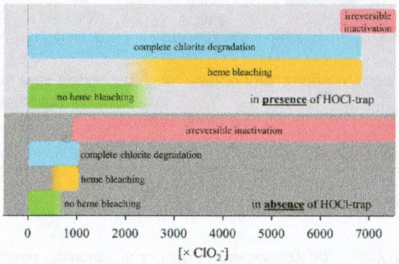
Shin Nakamura, Ryo Nagao, Ryouta Takahashi, and Takumi Noguchi*




3145 dx.doi.org/10.1021/bi500401k

**Transiently Produced Hypochlorite Is Responsible for the Irreversible Inhibition of Chlorite Dismutase**

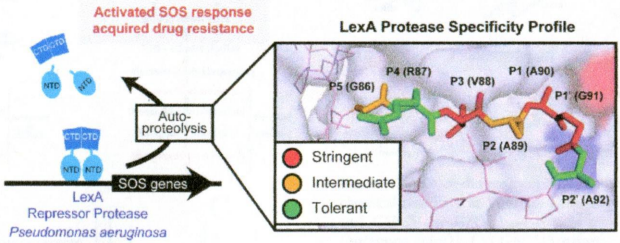
Stefan Hofbauer, Clemens Gruber, Katharina F. Pirker, Axel Sündermann, Irene Schaffner, Christa Jakopitsch, Chris Oostenbrink, Paul G. Furtmüller, and Christian Obinger*



3158 dx.doi.org/10.1021/bi500026e

**Specificity Determinants for Autoproteolysis of LexA, a Key Regulator of Bacterial SOS Mutagenesis**

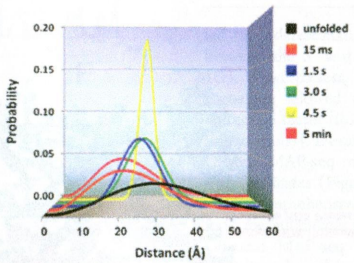
Charlie Y. Mo, L. Dillon Birdwell, and Rahul M. Kohli*




3169 dx.doi.org/10.1021/bi500069w

**Fast Closure of N-Terminal Long Loops but Slow Formation of $\beta$ Strands Precedes the Folding Transition State of *Escherichia coli* Adenylate Kinase**

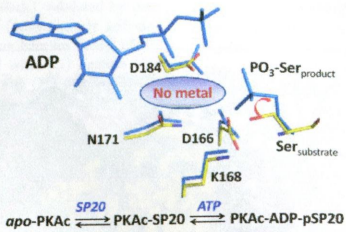
Tomer Orevi, Eldad Ben Ishay, Sivan Levin Gershanov, Mayan Ben Dalak, Dan Amir, and Elisha Haas*




3179 dx.doi.org/10.1021/bi5000965

**Metal-Free cAMP-Dependent Protein Kinase Can Catalyze Phosphoryl Transfer**

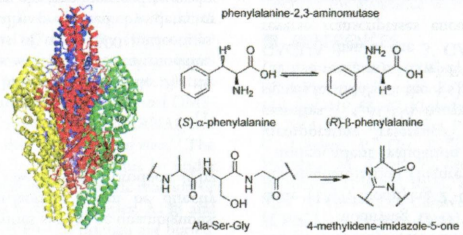
Oksana Gerlits, Amit Das, Malik M. Keshwani, Susan Taylor, Mary Jo Waltman, Paul Langan, William T. Heller, and Andrey Kovalevsky*



3187 dx.doi.org/10.1021/bi500187a

**Structural Investigations into the Stereochemistry and Activity of a Phenylalanine-2,3-aminomutase from *Taxus chinensis***

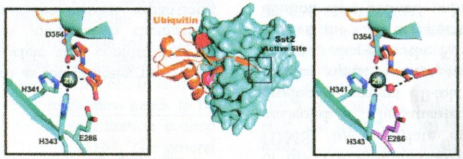
Gjalt G. Wybenga, Wiktor Szymanski, Bian Wu, Ben L. Feringa, Dick B. Janssen, and Bauke W. Dijkstra*




3199 dx.doi.org/10.1021/bi5003162

**Insights into the Mechanism of Deubiquitination by JAMM Deubiquitinases from Cocrystal Structures of the Enzyme with the Substrate and Product**

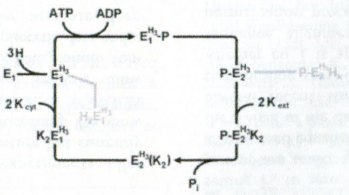
Rashmi K. Shrestha, Judith A. Ronau, Christopher W. Davies, Robert G. Guenette, Eric R. Strieter, Lake N. Paul, and Chittaranjan Das*




3218 dx.doi.org/10.1021/bi500336w

**Role of Protons in the Pump Cycle of KdpFABC Investigated by Time-Resolved Kinetic Experiments**

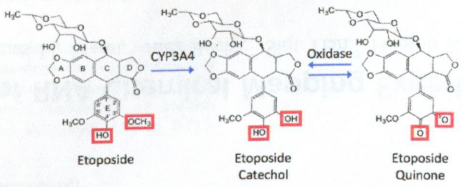
Bojana Damnjanovic and Hans-Jürgen Apell*




3229 dx.doi.org/10.1021/bi500421q

**Etoposide Quinone Is a Covalent Poison of Human Topoisomerase IIβ**

Nicholas A. Smith, Jo Ann W. Byl, Susan L. Mercer, Joseph E. Deweese, and Neil Osheroff*

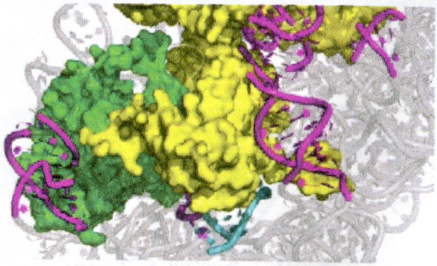


3237

dx.doi.org/10.1021/bi500198b

**Ribosome RNA Assembly Intermediates Visualized in Living Cells**

Jennifer L. McGinnis and Kevin M. Weeks*

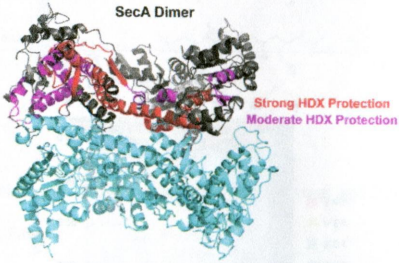


3248 Ⓢ

dx.doi.org/10.1021/bi500348p

**Analysis of SecA Dimerization in Solution**

Andy J. Wowor, Yuetian Yan, Sarah M. Auclair, Dongmei Yu, Jun Zhang, Eric R. May, Michael L. Gross, Debra A. Kendall, and James L. Cole*




Ⓢ Supporting Information available via online article