

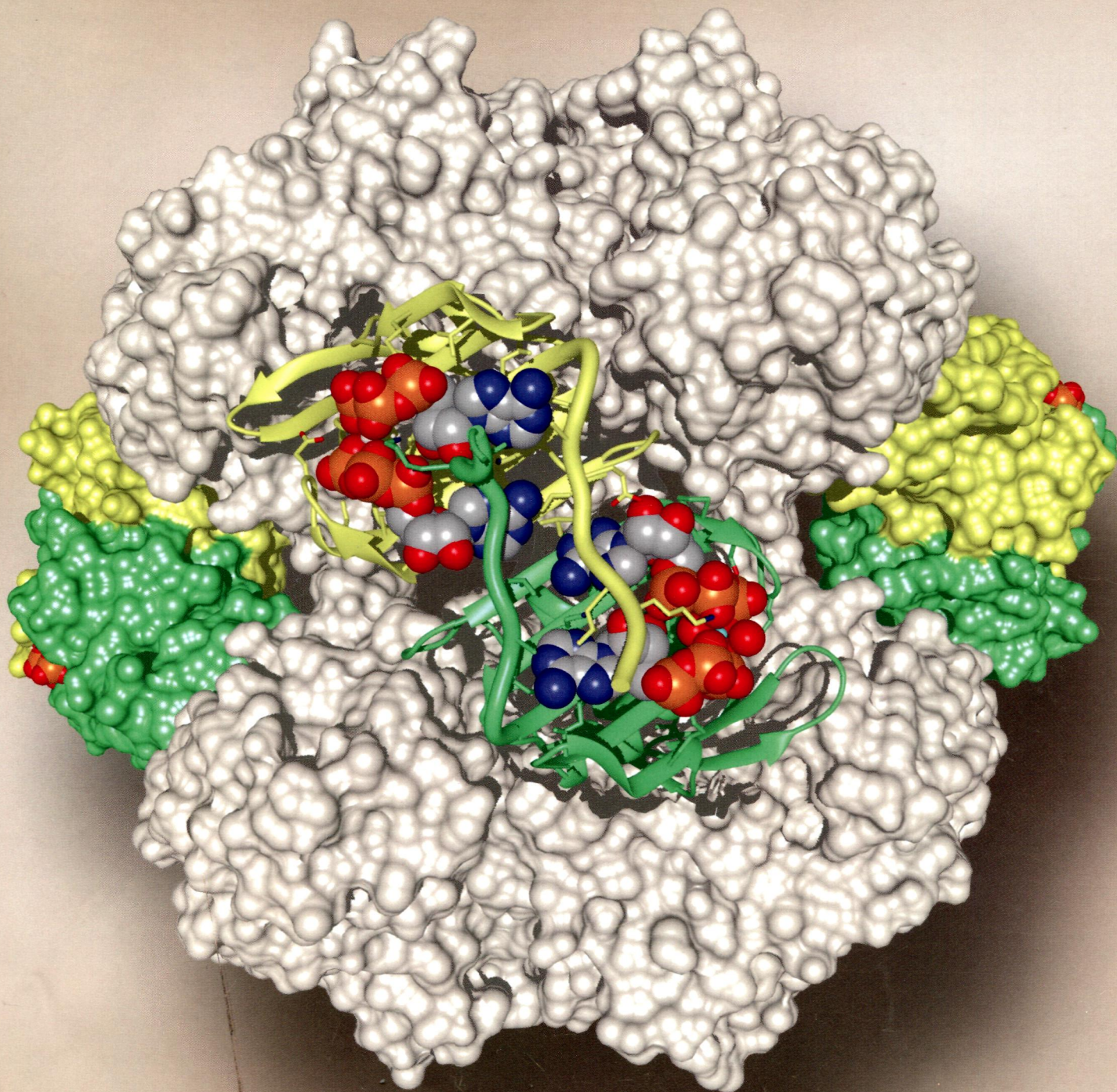
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# BIOCHEMISTRY

including biophysical chemistry & molecular biology

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**ON THE COVER:** Three-dimensional structure of the *Escherichia coli* aspartate transcarbamoylase holoenzyme in the R state with two ATP molecules and a  $Mg^{2+}$  cation bound to each regulatory chain. The two catalytic trimers are shown as surface representations (tan). One chain of each of the three regulatory dimers is colored yellow, while the other is colored green. The two regulatory dimers on the sides are shown as surface representations, while the third, in front, is shown as a ribbon trace. The binding of the two ATP molecules and one  $Mg^{2+}$  molecule induces an alteration of the N-termini of the regulatory chains (thick lines), displacing them into the adjacent regulatory chain and thereby strengthening the dimer interface and further stabilizing the R state of the enzyme. This figure was generated using UCSF Chimera. [Cockrell, G. M., et al. (2013) *Biochemistry* 52, 8036–8047]

## Rapid Reports

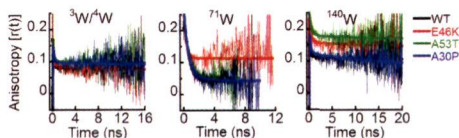
807



dx.doi.org/10.1021/bi401543z

### Site-Specific Fluorescence Dynamics of $\alpha$ -Synuclein Fibrils Using Time-Resolved Fluorescence Studies: Effect of Familial Parkinson's Disease-Associated Mutations

Shruti Sahay, A. Anoop, G. Krishnamoorthy,\* and Samir K. Maji\*



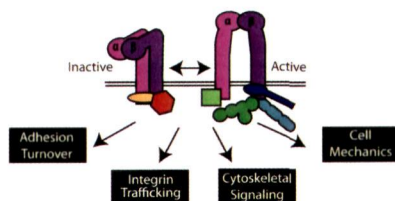
## Current Topics

810

dx.doi.org/10.1021/bi401596q

### Integrin Cytoplasmic Tail Interactions

Elizabeth M. Morse, Nina N. Brahme, and David A. Calderwood\*

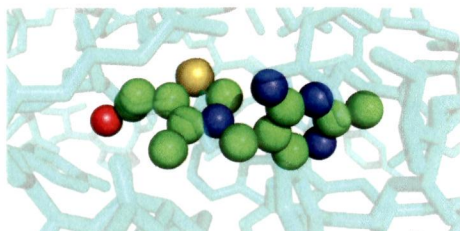


821

### Thiamin Function, Metabolism, Uptake, and Transport

Sergio Manzetti, Jin Zhang, and David van der Spoel\*

dx.doi.org/10.1021/bi401618y

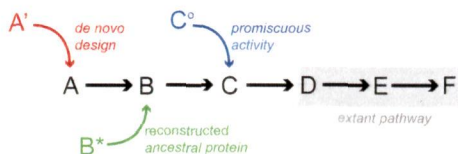


836

### Enzyme Recruitment and Its Role in Metabolic Expansion

Cindy Schulenburg\* and Brian G. Miller\*

dx.doi.org/10.1021/bi401667f



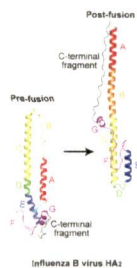
## Articles

846

### Structural Insights into the Membrane Fusion Mechanism Mediated by Influenza Virus Hemagglutinin

Fengyun Ni, Xiaorui Chen, Jun Shen, and Qinghua Wang\*

dx.doi.org/10.1021/bi401525h



6A

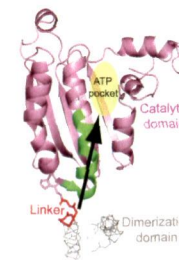
Biochemistry, Volume 53, Issue 5

855 **S**

### The Linker between the Dimerization and Catalytic Domains of the CheA Histidine Kinase Propagates Changes in Structure and Dynamics That Are Important for Enzymatic Activity

Xiqing Wang, Pramodh Vallurupalli, Anh Vu, Kwangwoon Lee, Sheng Sun, Wen-Ju Bai, Chun Wu, Hongjun Zhou, Joan-Emma Shea, Lewis E. Kay, and Frederick W. Dahlquist\*

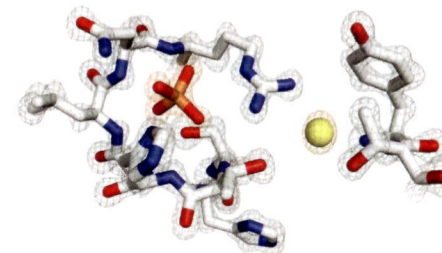
dx.doi.org/10.1021/bi4012379

862 **S**

### Structure of Human PIR1, an Atypical Dual-Specificity Phosphatase

Rajeshwer Singh Sankhala, Ravi Kumar Lokareddy, and Gino Cingolani\*

dx.doi.org/10.1021/bi401240x

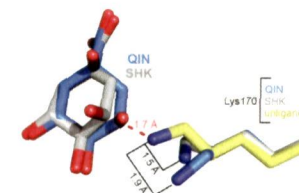


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### Crystal Structures of Type I Dehydroquinate Dehydratase in Complex with Quinate and Shikimate Suggest a Novel Mechanism of Schiff Base Formation

Samuel H. Light, Aleksandar Antanasijevic, Sankar N. Krishna, Michael Caffrey, Wayne F. Anderson, and Arnon Lavie\*

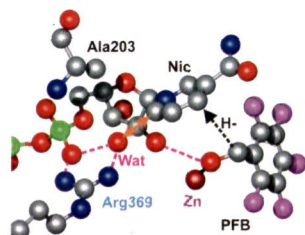
dx.doi.org/10.1021/bi4015506



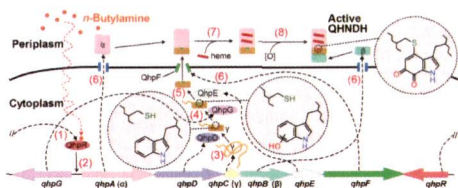
7A

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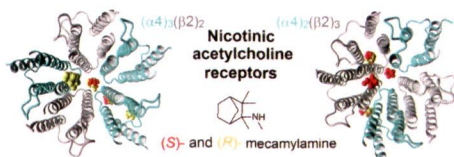
881 **S** dx.doi.org/10.1021/bi401583f  
**Effects of Cavities at the Nicotinamide Binding Site of Liver Alcohol Dehydrogenase on Structure, Dynamics and Catalysis**  
 Atsushi Yahashiri, Jon K. Rubach, and Bryce V. Plapp\*



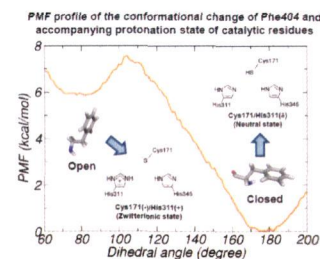
895 **S** dx.doi.org/10.1021/bi401625m  
**Identification of Genes Essential for the Biogenesis of Quinohemoprotein Amine Dehydrogenase**  
 Tadashi Nakai, Takafumi Deguchi, Ivo Frébort, Katsuyuki Tanizawa, and Toshihide Okajima\*



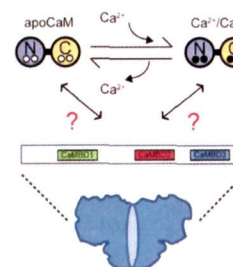
908 **S** dx.doi.org/10.1021/bi400969x  
**Molecular Interactions between Mecamylamine Enantiomers and the Transmembrane Domain of the Human  $\alpha 4\beta 2$  Nicotinic Receptor**  
 Vasyil Bondarenko, Katarzyna M. Targowska-Duda, Krzysztof Jozwiak, Pei Tang,\* and Hugo R. Arias\*



919 **S** dx.doi.org/10.1021/bi401308j  
**The Protonation State of Catalytic Residues in the Resting State of KasA Revisited: Detailed Mechanism for the Activation of KasA by Its Own Substrate**  
 Wook Lee and Bernd Engels\*



932 **S** dx.doi.org/10.1021/bi401502x  
**Lobe-Specific Calmodulin Binding to Different Ryanodine Receptor Isoforms**  
 Kelvin Lau, Mandy M. Y. Chan, and Filip Van Petegem\*



947 **S** dx.doi.org/10.1021/bi4014227  
**Glycine Decarboxylase Is an Unusual Amino Acid Decarboxylase Involved in Tumorigenesis**  
 Maybelle Kho Go, Wen Cai Zhang, Bing Lim, and Wen Shan Yew\*

