

TH
B60/bc

BIOCHEMISTRY

including biophysical chemistry & molecular biology

FEBRUARY 5, 2013 • VOLUME 52 NUMBER 5

pubs.acs.org/biochemistry



ACS Publications

MOST TRUSTED. MOST CITED. MOST READ.

www.acs.org

BIOCHEMISTRY

including biophysical chemistry & molecular biology

February 5, 2013
Volume 52, Issue 5
Pages 765-992

Articles

Kinetics and Thermodynamics of DNA, RNA, and Hybrid Duplex Formation

Brittany Rauzan, Elizabeth McMichael, Rachel Cave, Lesley R. Sevcik, Kara Ostrosky, Elisabeth Whitman, Rachel Stegemann, Audra L. Sinclair, Martin J. Serra, and Alice A. Deckert
pp 765–772

Publication Date (Web): January 28, 2013 (Article)

DOI: 10.1021/bi3013005

 Section:

General Biochemistry

Interconverting Conformations of Slipped-DNA Junctions Formed by Trinucleotide Repeats Affect Repair Outcome

Meghan M. Slean, Kaalak Reddy, Bin Wu, Kerrie Nichol Edamura, Mariana Kekis, Frank H. T. Nelissen, Ruud L. E. G. Aspers, Marco Tessari, Orlando D. Schärer, Sybren S. Wijmenga, and Christopher E. Pearson
pp 773–785

Publication Date (Web): January 22, 2013 (Article)

DOI: 10.1021/bi301369b

 ACS AuthorChoice

 Section:

Biochemical Genetics

Effect of Flanking Bases on the DNA Specificity of EmBP-1

Antonia T. De Jong
pp 786–794

Publication Date (Web): January 10, 2013 (Article)

DOI: 10.1021/bi301404h

 Section:

Biochemical Genetics

Ensemble Analysis of Primary MicroRNA Structure Reveals an Extensive Capacity To Deform near the Drosha Cleavage Site

Kaycee A. Quarles, Debashish Sahu, Mallory A. Havens, Ellen R. Forsyth, Christopher Wostenberg, Michelle L. Hastings, and Scott A. Showalter
pp 795–807

Publication Date (Web): January 10, 2013 (Article)

DOI: 10.1021/bi301452a

 Section:

General Biochemistry

Amyloid-Forming Proteins Alter the Local Mechanical Properties of Lipid Membranes

Kathleen A. Burke, Elizabeth A. Yates, and Justin Legleiter

pp 808–817

Publication Date (Web): January 18, 2013 (Article)

DOI: 10.1021/bi301070v

 Section:

General Biochemistry

Nuclear Resonance Vibrational Spectroscopy and Electron Paramagnetic Resonance Spectroscopy of ⁵⁷Fe-Enriched [FeFe] Hydrogenase Indicate Stepwise Assembly of the H-Cluster

Jon M. Kuchenreuther, Yisong Guo, Hongxin Wang, William K. Myers, Simon J. George, Christine A. Boyke, Yoshitaka Yoda, E. Ercan Alp, Jiyong Zhao, R. David Britt, James R. Swartz, and Stephen P. Cramer
pp 818–826

Publication Date (Web): December 18, 2012 (Article)

DOI: 10.1021/bi301336r

 Section:

Enzymes

Proton Uptake and pK_a Changes in the Uncoupled Asn139Cys Variant of Cytochrome c Oxidase

Ann-Louise Johansson, Jens Carlsson, Martin Högbom, Jonathan P. Hosler, Robert B. Gennis, and Peter Brzezinski

pp 827–836

Publication Date (Web): January 10, 2013 (Article)

DOI: 10.1021/bi301597a

 Section:

Enzymes

Mutation of Trimethyllysine 72 to Alanine Enhances His79–Heme-Mediated Dynamics of Iso-1-cytochrome c

Melisa M. Cherney, Carolyn C. Junior, and Bruce E. Bowler

pp 837–846

Publication Date (Web): January 11, 2013 (Article)

DOI: 10.1021/bi301599g

 Section:

General Biochemistry

Membrane Interactions of the Amphipathic Amino Terminus of Huntingtin

Matthias Michalek, Evgeniy S. Salnikov, Sebastiaan Werten, and Burkhard Bechinger

pp 847–858

Publication Date (Web): January 10, 2013 (Article)

DOI: 10.1021/bi301325q

 Section:

General Biochemistry

Photoaffinity Labeling of the Sigma-1 Receptor with N-[3-(4-Nitrophenyl)propyl]-N-dodecylamine: Evidence of Receptor Dimers

Uyen B. Chu, Subramaniam Ramachandran, Abdol R. Hajipour, and Arnold E. Ruoho
pp 859–868

Publication Date (Web): January 16, 2013 (Article)

DOI: 10.1021/bi301517u

 Section:

General Biochemistry

D₂O Solvent Isotope Effects Suggest Uniform Energy Barriers in Ribulose-1,5-bisphosphate Carboxylase/Oxygenase Catalysis

Guillaume G. B. Tcherkez, Camille Bathellier, Hilary Stuart-Williams, Spencer Whitney, Elisabeth Gout, Richard Bligny, Murray Badger, and Graham D. Farquhar
pp 869–877

Publication Date (Web): January 9, 2013 (Article)

DOI: 10.1021/bi300933u

 Section:

Enzymes

Mutagenesis of a Conserved Glutamate Reveals the Contribution of Electrostatic Energy to Adenosylcobalamin Co–C Bond Homolysis in Ornithine 4,5-Aminomutase and Methylmalonyl-CoA Mutase

Caitlyn Makins, Alex V. Pickering, Chloe Mariani, and Kirsten R. Wolthers
pp 878–888

Publication Date (Web): January 11, 2013 (Article)

DOI: 10.1021/bi3012719

 Section:

Enzymes

Action and Timing of BacC and BacD in the Late Stages of Biosynthesis of the Dipeptide Antibiotic Bacilysin

Jared B. Parker and Christopher T. Walsh
pp 889–901

Publication Date (Web): January 14, 2013 (Article)

DOI: 10.1021/bi3016229

 Section:

Microbial, Algal, and Fungal Biochemistry

Structure of the Bifunctional Acyltransferase/Decarboxylase LnmK from the Leinamycin Biosynthetic Pathway Revealing Novel Activity for a Double-Hot-Dog Fold

Jeremy R. Lohman, Craig A. Bingman, George N. Phillips, Jr., and Ben Shen
pp 902–911

Publication Date (Web): January 15, 2013 (Article)

DOI: 10.1021/bi301652y

 Section:

Enzymes

Active Site Loop Dynamics of a Class IIa Fructose 1,6-Bisphosphate Aldolase from Mycobacterium tuberculosis

Scott D. Pegan, Kamolchanok Rukseree, Glenn C. Capodagli, Erica A. Baker, Olga Krasnykh, Scott G. Franzblau, and Andrew D. Mesecar
pp 912–925

Publication Date (Web): January 8, 2013 (Article)

DOI: 10.1021/bi300928u

 Section:

Enzymes

Characterization of AusA: A Dimodular Nonribosomal Peptide Synthetase Responsible for the Production of Aureusimine Pyrazinones

Daniel J. Wilson, Ce Shi, Aaron M. Teitelbaum, Andrew M. Gulick, and Courtney C. Aldrich
pp 926–937

Publication Date (Web): January 9, 2013 (Article)

DOI: 10.1021/bi301330q

 Section:

Enzymes

Atomic Structure of Dual-Specificity Phosphatase 26, a Novel p53 Phosphatase

Ravi Kumar Lokareddy, Anshul Bhardwaj, and Gino Cingolani
pp 938–948

Publication Date (Web): January 8, 2013 (Article)

DOI: 10.1021/bi301476m

 Section:

Enzymes

Temperature and Urea Have Opposing Impacts on Polyproline II Conformational Bias

W. Austin Elam, Travis P. Schrank, Andrew J. Campagnolo, and Vincent J. Hilser
pp 949–958

Publication Date (Web): January 27, 2013 (Article)

DOI: 10.1021/bi301435p

 Section:

General Biochemistry

Simulation of Catalytic Water Activation in Mitochondrial F₁-ATPase Using a Hybrid Quantum Mechanics/Molecular Mechanics Approach: An Alternative Role for β -Glu 188

Fernando Martín-García, Jesús I. Mendieta-Moreno, Íñigo Marcos-Alcalde, Paulino Gómez-Puertas, and Jesús Mendieta
pp 959–966

Publication Date (Web): January 15, 2013 (Article)

DOI: 10.1021/bi301109x

 Section:

Enzymes

Conduction and Block of Inward Rectifier K⁺ Channels: Predicted Structure of a Potent Blocker of Kir2.1

Tamsyn A. Hilder and Shin-Ho Chung

pp 967–974

Publication Date (Web): January 15, 2013 (Article)

DOI: 10.1021/bi301498x

 Section:

General Biochemistry

DNA Polymerase λ Inactivation by Oxidized Abasic Sites

Adam J. Stevens, Lirui Guan, Katarzyna Bebenek, Thomas A. Kunkel, and Marc M. Greenberg

pp 975–983

Publication Date (Web): January 18, 2013 (Article)

DOI: 10.1021/bi301592x

 Section:

Enzymes

Chemical Mutagenesis of Vaccinia DNA Topoisomerase Lysine 167 Provides Insights to the Catalysis of DNA Transesterification

Lyudmila Yakovleva and Stewart Shuman

pp 984–991

Publication Date (Web): January 15, 2013 (Article)

DOI: 10.1021/bi301643h

 Section:

Enzymes