

ПН
B 60/6c

BIOCHEMISTRY

including biophysical chemistry & molecular biology

JANUARY 8, 2013 • VOLUME 52 NUMBER 1

pubs.acs.org/biochemistry



ACS Publications

MOST TRUSTED. MOST CITED. MOST READ.

www.acs.org

BIOCHEMISTRY

including biophysical chemistry & molecular biology

January 8, 2013
Volume 52, Issue 1
Pages 1-278

Rapid Reports

Distinguishing the Chemical Moiety of Phosphoenolpyruvate That Contributes to Allostery in Muscle Pyruvate Kinase

James M. Urness, Kelly M. Clapp, J. Cody Timmons, Xinyan Bai, Nalin Chandrasoma, Keith R. Buszek, and Aron W. Fenton

pp 1–3

Publication Date (Web): December 21, 2012 (Rapid Report)

DOI: 10.1021/bi301628k

 Section:

Enzymes

Current Topics

Synthetic Analogues of Nickel Superoxide Dismutase: A New Role for Nickel in Biology

Ellen P. Broering, Phan T. Truong, Eric M. Gale, and Todd C. Harrop

pp 4–18

Publication Date (Web): December 14, 2012 (Current Topic)

DOI: 10.1021/bi3014533

 Section:

Enzymes

Accelerated Publications

The Luciferin Binding Site Residues C/T311 (S314) Influence the Bioluminescence Color of Beetle Luciferases through Main-Chain Interaction with Oxyluciferin Phenolate

V. R. Viviani, D. T. Amaral, D. R. Neves, A. Simões, and F. G. C. Arnoldi

pp 19–27

Publication Date (Web): December 3, 2012 (Accelerated Publication)

DOI: 10.1021/bi300740y

 Section:

Enzymes

Articles

Insights into the Intramolecular Coupling between the N- and C-Domains of Troponin C Derived from High-Pressure, Fluorescence, Nuclear Magnetic Resonance, and Small-Angle X-ray Scattering Studies

Guilherme A. P. de Oliveira, Cristiane B. Rocha, Mayra de A. Marques, Yraima Cordeiro, Martha M. Sorenson, Débora Foguel, Jerson L. Silva, and Marisa C. Suarez
pp 28–40

Publication Date (Web): December 7, 2012 (Article)

DOI: 10.1021/bi301139d

 Section:

General Biochemistry

Spectroscopic and Calorimetric Studies on the Binding of an Indoloquinoline Drug to Parallel and Antiparallel DNA Triplexes

Fanny Riechert-Krause, Karolin Autenrieth, Andrea Eick, and Klaus Weisz

pp 41–52

Publication Date (Web): December 12, 2012 (Article)

DOI: 10.1021/bi301381h

 Section:

Pharmacology

Coordination of Copper to the Membrane-Bound Form of α -Synuclein

Christopher G. Dudzik, Eric D. Walter, Benjamin S. Abrams, Melissa S. Jurica, and Glenn L. Millhauser

pp 53–60

Publication Date (Web): December 19, 2012 (Article)

DOI: 10.1021/bi301475q

 Section:

General Biochemistry

Inhibition of γ -Secretase Activity by a Monoclonal Antibody against the Extracellular Hydrophilic Loop of Presenilin 1

Shizuka Takagi-Niidome, Satoko Osawa, Taisuke Tomita, and Takeshi Iwatsubo

pp 61–69

Publication Date (Web): December 4, 2012 (Article)

DOI: 10.1021/bi301252r

 Section:

Enzymes

The Coil-to-Helix Transition in IlvN Regulates the Allosteric Control of Escherichia coli Acetohydroxyacid Synthase I

N. Megha Karanth and Siddhartha P. Sarma

pp 70–83

Publication Date (Web): December 3, 2012 (Article)

DOI: 10.1021/bi301415m

 Section:

Enzymes

Effects of Select Histidine to Cysteine Mutations on Transcriptional Regulation by Escherichia coli RcnR

Khadine A. Higgins, Heidi Q. Hu, Peter T. Chivers, and Michael J. Maroney

pp 84–97

Publication Date (Web): December 7, 2012 (Article)

DOI: 10.1021/bi300886q

Section:

General Biochemistry

Resonance Raman Spectral Properties of FMN of Bovine Heart NADH:ubiquinone Oxidoreductase Suggesting a Mechanism for the Prevention of Spontaneous Production of Reactive Oxygen Species

Masahide Hikita, Kyoko Shinzawa-Itoh, Masakazu Moriyama, Takashi Ogura, Kiyohito Kihira, and Shinya Yoshikawa

pp 98–104

Publication Date (Web): December 7, 2012 (Article)

DOI: 10.1021/bi3011972

Section:

Enzymes

Iron Content of Saccharomyces cerevisiae Cells Grown under Iron-Deficient and Iron-Overload Conditions

Gregory P. Holmes-Hampton, Nema D. Jhurry, Sean P. McCormick, and Paul A. Lindahl

pp 105–114

Publication Date (Web): December 19, 2012 (Article)

DOI: 10.1021/bi3015339

Section:

Microbial, Algal, and Fungal Biochemistry

Proper Protein Glycosylation Promotes Mitogen-Activated Protein Kinase Signal Fidelity

Evan C. Lien, Michal J. Nagiec, and Henrik G. Dohlman

pp 115–124

Publication Date (Web): December 4, 2012 (Article)

DOI: 10.1021/bi3009483

Section:

Microbial, Algal, and Fungal Biochemistry

Water Networks in Fast Proton Transfer during Catalysis by Human Carbonic Anhydrase II

Rose Mikulski, Dayne West, Katherine H. Sippel, Balendu Sankara Awvaru, Mayank Aggarwal, Chingkuang Tu, Robert McKenna, and David N. Silverman

pp 125–131

Publication Date (Web): December 6, 2012 (Article)

DOI: 10.1021/bi301099k

Section:

Enzymes

Kinetic Mechanism of Indole-3-glycerol Phosphate Synthase

Sandra Schlee, Susanne Dietrich, Tomasz Kurćon, Pamela Delaney, Nina M. Goodey, and Reinhard Sterner

pp 132–142

Publication Date (Web): December 10, 2012 (Article)

DOI: 10.1021/bi301342j

Section:

Phosphatidylserine-Induced Factor Xa Dimerization and Binding to Factor Va Are Competing Processes in Solution

Rinku Majumder, Tilen Koklic, Alireza R. Rezaie, and Barry R. Lentz

pp 143–151

Publication Date (Web): December 7, 2012 (Article)

DOI: 10.1021/bi301239z

 Section:

Enzymes

Effects of Actin-Binding Proteins on the Thermal Stability of Monomeric Actin

Anastasia V. Pivovarova, Natalia A. Chebotareva, Elena V. Kremneva, Pekka Lappalainen, and Dmitrii I. Levitsky

pp 152–160

Publication Date (Web): December 11, 2012 (Article)

DOI: 10.1021/bi3012884

 Section:

General Biochemistry

An Initial Event in the Insect Innate Immune Response: Structural and Biological Studies of Interactions between β -1,3-Glucan and the N-Terminal Domain of β -1,3-Glucan Recognition Protein

Huaïen Dai, Yasuaki Hiromasa, Daisuke Takahashi, David VanderVelde, Jeffrey A. Fabrick, Michael R. Kanost, and Ramaswamy Krishnamoorthi

pp 161–170

Publication Date (Web): December 13, 2012 (Article)

DOI: 10.1021/bi301440p

 Section:

General Biochemistry

HIV-1 Vpu Protein Mediates the Transport of Potassium in *Saccharomyces cerevisiae*

Laura Herrero, Noemí Monroy, and María Eugenia González

pp 171–177

Publication Date (Web): December 14, 2012 (Article)

DOI: 10.1021/bi3011175

 ACS AuthorChoice

 Section:

Microbial, Algal, and Fungal Biochemistry

Unilateral Access Regulation: Ground State Dynamics of the *Pseudomonas aeruginosa* Outer Membrane Efflux Duct OprM

Dennis C. Koch, Martin Raunest, Tim Harder, and Christian Kandt

pp 178–187

Publication Date (Web): December 12, 2012 (Article)

DOI: 10.1021/bi3014714

 Section:

Spectroscopic, Steady-State Kinetic, and Mechanistic Characterization of the Radical SAM Enzyme QueE, Which Catalyzes a Complex Cyclization Reaction in the Biosynthesis of 7-Deazapurines

Reid M. McCarty, Carsten Krebs, and Vahe Bandarian

pp 188–198

Publication Date (Web): November 29, 2012 (Article)

DOI: 10.1021/bi301156w

 Section:

Enzymes

Substrate-Induced Control of Product Formation by Protein Arginine Methyltransferase 1

Shanying Gui, Whitney L. Wooderchak-Donahue, Tianzhu Zang, Dong Chen, Michael P. Daly, Zhaohui Sunny Zhou, and Joan M. Hevel

pp 199–209

Publication Date (Web): December 10, 2012 (Article)

DOI: 10.1021/bi301283t

 Section:

Enzymes

The Action of Cytochrome b₅ on CYP2E1 and CYP2C19 Activities Requires Anionic Residues D58 and D65

Hwei-Ming Peng and Richard J. Auchus

pp 210–220

Publication Date (Web): November 29, 2012 (Article)

DOI: 10.1021/bi301384n

 Section:

Enzymes

Oxidative Metabolites of Curcumin Poison Human Type II Topoisomerases

Adam C. Ketron, Odaine N. Gordon, Claus Schneider, and Neil Osheroff

pp 221–227

Publication Date (Web): December 19, 2012 (Article)

DOI: 10.1021/bi3014455

 Section:

Pharmacology

Functional Annotation and Three-Dimensional Structure of an Incorrectly Annotated Dihydroorotase from cog3964 in the Amidohydrolase Superfamily

Argentina Ornelas, Magdalena Korczynska, Sugadev Ragumani, Desigan Kumaran, Tamari Narindoshvili, Brian K. Shoichet, Subramanyam Swaminathan, and Frank M. Raushel

pp 228–238

Publication Date (Web): December 10, 2012 (Article)

DOI: 10.1021/bi301483z

 Section:

Enzymes

Discovery of an L-Fucono-1,5-lactonase from cog3618 of the Amidohydrolase Superfamily

Merlin Eric Hobbs, Matthew Vetting, Howard J. Williams, Tamari Narindoshvili, Devon M. Kebodeaux, Brandon Hillerich, Ronald D. Seidel, Steven C. Almo, and Frank M. Raushel
pp 239–253

Publication Date (Web): December 10, 2012 (Article)

DOI: 10.1021/bi3015554

 Section:

Enzymes

Structure and Functional Analysis of the BRCT Domain of Translesion Synthesis DNA Polymerase Rev1

John M. Pryor, Lokesh Gakhar, and M. Todd Washington
pp 254–263

Publication Date (Web): December 14, 2012 (Article)

DOI: 10.1021/bi301572z

 Section:

Enzymes

pH Regulation of the Kinetic Stability of the Lipase from Thermomyces lanuginosus

H. Wang, K. K. Andersen, P. Sehgal, J. Hagedorn, P. Westh, K. Borch, and D. E. Otzen
pp 264–276

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

DOI: 10.1021/bi301258e

 Section:

Enzymes

Additions and Corrections

Correction to Efficient Stabilization of Phosphodiester (PO), Phosphorothioate (PS), and 2'-O-Methoxy (2'-OMe) DNA·RNA Hybrid Duplexes by Amino Sugars

I. Charles, Erik Davis, and Dev P. Arya
pp 277–277

Publication Date (Web): December 24, 2012 (Addition/Correction)

DOI: 10.1021/bi301245w