

**1. Mechanical Control of ATP Synthase Function: Activation Energy Difference between Tight and Loose Binding Sites**

Tamas Beke-Somfai, Per Lincoln, Bengt Nordén

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**2. Wiring Photosystem I for Direct Solar Hydrogen Production**

Carolyn E. Lubner, Rebecca Grimme, Donald A. Bryant, John H. Golbeck

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**3. Neutron Structure of Human Carbonic Anhydrase II: Implications for Proton Transfer**

S. Zoltan Fisher, Andrey Y. Kovalevsky, John F. Domsic, Marat Mustyakimov, Robert McKenna, David N. Silverman, Paul A. Langan

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**4. Na<sup>+</sup> and K<sup>+</sup> Allosterically Regulate Cooperative DNA Binding by the Human Progesterone Receptor**

Keith D. Connaghan, Aaron F. Heneghan, Michael T. Miura, David L. Bain

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**5. An Unusual Pattern of CytR and CRP Binding Energetics at Escherichia coli cddP Suggests a Unique Blend of Class I and Class II Mediated Activation**

Allison K. Holt, Donald F. Senear

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**6. New Glucosidase Inhibitors from an Ayurvedic Herbal Treatment for Type 2 Diabetes: Structures and Inhibition of Human Intestinal Maltase-Glucoamylase with Compounds from Salacia reticulata**

Lyann Sim, Kumarasamy Jayakanthan, Sankar Mohan, Ravindranath Nasi, Blair D. Johnston, B. Mario Pinto, David R. Rose

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**7. Triple Recognition of B-DNA by a Neomycin–Hoechst 33258–Pyrene Conjugate**

Bert Willis, Dev P. Arya

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**8. The Length of the Bound Fatty Acid Influences the Dynamics of the Acyl Carrier Protein and the Stability of the Thioester Bond**

Gregory A. Zornetzer, Justinn Tanem, Brian G. Fox, John L. Markley

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**9. Nuclear Magnetic Resonance Secondary Shifts of a Light-Harvesting 2 Complex Reveal Local Backbone Perturbations Induced by Its Higher-Order Interactions**

Anjali Pandit, Piotr K. Wawrzyniak, Adriaan J. van Gammeren, Francesco Buda, Swapna Ganapathy, Huub J. M. de Groot

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**10. Bovine Heart NADH–Ubiquinone Oxidoreductase Contains One Molecule of Ubiquinone with Ten Isoprene Units as One of the Cofactors**

Kyoko Shinzawa-Itoh, Junko Seiyama, Hirohito Terada, Ryohei Nakatsubo, Kazuki Naoki, Yumiko Nakashima, Shinya Yoshikawa

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**11. Hydrogen Bond Interactions of the Pheophytin Electron Acceptor and Its Radical Anion in Photosystem II As Revealed by Fourier Transform Infrared Difference Spectroscopy**

Yuichi Shibuya, Ryouta Takahashi, Tatsunori Okubo, Hiroyuki Suzuki, Miwa Sugiura, Takumi Noguchi

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**12. Hydrophobic Residues in Helix 8 of Cannabinoid Receptor 1 Are Critical for Structural and Functional Properties**

Kwang H. Ahn, Akiko Nishiyama, Dale F. Mierke, Debra A. Kendall

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**13. A Comparative Study on Conformation and Ligand Binding of the Neuronal Uncoupling Proteins**

Marina V. Ivanova, Tuan Hoang, Fern R. McSorley, Gabriela Krnac, Matthew D. Smith, Masoud Jelokhani-Niaraki

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**14. Structure–Function Analysis of RAMP1–RAMP3 Chimeras**

Tao Qi, John Simms, Richard J. Bailey, Mark Wheatley, Dan L. Rathbone, Debbie L. Hay, David R. Poyner

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**15. ApoE Induces Serum Paraoxonase PON1 Activity and Stability Similar to ApoA-I**

Leonid Gaidukov, Viji R. I, Shiri Yacobson, Mira Rosenblat, Michael Aviram, Dan S. Tawfik

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**16. Structural Insights into Substrate Specificity and the anti  $\beta$ -Elimination Mechanism of Pectate Lyase**

Arefeh Seyedarabi, Teng Teng To, Salyha Ali, Syeed Hussain, Markus Fries, Robert Madsen, Mads H. Clausen, Susana Teixeira, Keith Brocklehurst, Richard W. Pickersgill

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**17. Structural Insights into the Dual Activities of the Nerve Agent Degrading Organophosphate Anhydrolase/Prolidase**

Nand K. Vyas, Alexei Nickitenko, Vipin K. Rastogi, Saamil S. Shah, Florante A. Quiocho

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**18. The Structure of the Proline Utilization A Proline Dehydrogenase Domain Inactivated by N-Propargylglycine Provides Insight into Conformational Changes Induced by Substrate Binding and Flavin Reduction,**

Dhiraj Srivastava, Weidong Zhu, William H. Johnson Jr., Christian P. Whitman, Donald F. Becker, John J. Tanner

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**19. Antibodies Raised Against Chlamydial Lipopolysaccharide Antigens Reveal Convergence in Germline Gene Usage and Differential Epitope Recognition**

Cory L. Brooks, Sven Müller-Loennies, Svetlana N. Borisova, Lore Brade, Paul Kosma, Tomoko Hiram, C. Roger MacKenzie, Helmut Brade, Stephen V. Evans

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**20. pH-Dependent Conformational Changes in Tear Lipocalin by Site-Directed Tryptophan Fluorescence**

Oktay K. Gasymov, Adil R. Abduragimov, Ben J. Glasgow

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**21. The Selenazal Drug Ebselen Potently Inhibits Indoleamine 2,3-Dioxygenase by Targeting Enzyme Cysteine Residues**

Andrew C. Terentis, Mohammed Freewan, Tito S. Sempértegui Plaza, Mark J. Raftery, Roland Stocker, Shane R. Thomas

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**22. Efavirenz Binding to HIV-1 Reverse Transcriptase Monomers and Dimers**

Valerie A. Braz, Leslie A. Holladay, Mary D. Barkley

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**23. Structure, Mechanism, and Substrate Profile for Sco3058: The Closest Bacterial Homologue to Human Renal Dipeptidase,**

Jennifer A. Cummings, Tinh T. Nguyen, Alexander A. Fedorov, Peter Kolb, Chengfu Xu, Elena V. Fedorov, Brian K. Shoichet, David P. Barondeau, Steven C. Almo, Frank M. Raushel

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**24. Fluorescence Competition Assay Measurements of Free Energy Changes for RNA Pseudoknots**

Biao Liu, Neelaabh Shankar, Douglas H. Turner

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**25. Residues Essential for Plasminogen Binding by the Cation-Independent Mannose 6-Phosphate Receptor**

Richard N. Bohnsack, Manish Patel, Linda J. Olson, Sally S. Twining, Nancy M. Dahms

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**26. Measurement of Intrinsic Rate Constants in the Tyrosine Hydroxylase Reaction**

Bekir E. Eser, Paul F. Fitzpatrick

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