

# Contents

---

---

## Vol. 70, No. 1, 2005

Simultaneous English language translation of the journal is available from Pleiades Publishing, Inc.  
Distributed worldwide by Springer Science+Business Media, Inc. *Biochemistry* (Moscow) ISSN 0006-2979.

---

---

|                                                                                                                                                                                                                                                                                                                                      | <b>Accelerated Publication</b> |  | <b>Engl./Russ.</b> |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--|--------------------|--|
| Analysis of Interactions of DNA Polymerase $\beta$ and Reverse Transcriptases of Human Immunodeficiency and Mouse Leukemia Viruses with dNTP Analogs Containing a Modified Sugar Residue<br><i>N. A. Lebedeva, T. A. Seredina, V. N. Silnikov, T. V. Abramova, A. S. Levina, S. N. Khodyreva, N. I. Rechkunova, and O. I. Lavrik</i> | 1                              |  | 5                  |  |
| <hr/>                                                                                                                                                                                                                                                                                                                                |                                |  |                    |  |
|                                                                                                                                                                                                                                                                                                                                      | <b>Reviews</b>                 |  |                    |  |
| Structure and Activity of NO Synthase Inhibitors Specific to the L-Arginine Binding Site<br><i>S. Ya. Proskuryakov, A. G. Konoplyannikov, V. G. Skvortsov, A. A. Mandrugin, and V. M. Fedoseev</i>                                                                                                                                   | 8                              |  | 14                 |  |
| Molecular Mechanisms of Hormonal Activity. I. Receptors. Neuromediators. Systems with Second Messengers<br><i>V. I. Kulinsky and L. S. Kolesnichenko</i>                                                                                                                                                                             | 24                             |  | 33                 |  |
| D-Amino Acid Oxidase: Structure, Catalytic Mechanism, and Practical Application<br><i>V. I. Tishkov and S. V. Khoronenkova</i>                                                                                                                                                                                                       | 40                             |  | 51                 |  |
| <hr/>                                                                                                                                                                                                                                                                                                                                |                                |  |                    |  |
| Spatial Coordination of Chloroplast and Plasma Membrane Activities in <i>Chara</i> Cells and Its Disruption through Inactivation of 14-3-3 Proteins<br><i>A. A. Bulychev, P. W. J. van den Wijngaard, and A. H. de Boer</i>                                                                                                          | 55                             |  | 68                 |  |
| Construction and Expression of Novel Immunotoxin cpIL-4(13D)-PE38KDEL with Increased Activity<br><i>J.-X. Cui, J.-F. Ji, A.-G. Lv, and W.-F. Wu</i>                                                                                                                                                                                  | 62                             |  | 77                 |  |
| Metal-Free $PP_i$ Activates Hydrolysis of $MgPP_i$ by an <i>Escherichia coli</i> Inorganic Pyrophosphatase<br><i>Ju. P. Vainonen, N. N. Vorobyeva, E. V. Rodina, T. I. Nazarova, S. A. Kurilova, Ju. S. Skoblov, and S. M. Avaeva</i>                                                                                                | 69                             |  | 85                 |  |
| Changes in Antioxidant Status of Myocardium during Oxidative Stress under the Influence of Coenzyme $Q_{10}$<br><i>V. L. Lakomkin, G. G. Konovalova, E. I. Kalenikova, I. V. Zabbarova, A. I. Kaminni, A. K. Tikhaze, V. Z. Lankin, E. K. Ruuge, and V. I. Kapelko</i>                                                               | 79                             |  | 97                 |  |

|                                                                                                                                                                                                                                            |     |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| Biosynthesis of Uridine Diphosphate N-Acetyl-L-Fucosamine<br>in a Cell-Free System from <i>Salmonella arizonae</i> O:59<br><i>T. N. Druzhinina, N. A. Kalinchuk, and V. N. Shibaev</i>                                                     | 85  | 105 |
| Identification of Intermediate and Product from Methemoglobin-Catalyzed Oxidation<br>of <i>o</i> -Phenylenediamine in Two-Phase Aqueous–Organic System<br><i>De-Jia Li, Xi-Wen Li, Yu-Xiang Xie, Xiao-Qiang Cai, and Guo-Lin Zou</i>       | 92  | 113 |
| Vacuolar Na <sup>+</sup> /H <sup>+</sup> Antiporter from Barley: Identification and Response to Salt Stress<br><i>A. V. Vasekina, P. V. Yershov, O. S. Reshetova, T. V. Tikhonova,<br/>V. G. Lunin, M. S. Trofimova, and A. V. Babakov</i> | 100 | 123 |

---

### Short Communications

|                                                                                                                                                                                                                                               |     |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| Adhesion of Human Neutrophils to Fibronectin Is Inhibited by Comaruman,<br>Pectin of Marsh Cinquefoil <i>Comarum palustre</i> L., and by Its Fragments<br><i>S. V. Popov, R. G. Ovodova, G. Yu. Popova, I. R. Nikitina, and Yu. S. Ovodov</i> | 108 | 133 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|

---

### Chronicles

|                                                                                                                     |     |     |
|---------------------------------------------------------------------------------------------------------------------|-----|-----|
| Notable and Anniversary Dates in Biochemistry for 2005<br><i>N. P. Voskresenskaya and E. N. Bylinsky, Compilers</i> | 113 | 139 |
| Information for Authors                                                                                             | 117 | 144 |

---