

# Contents

---

**Vol. 55, No. 2, 2019**

---

Simultaneous English language translation of the journal is available from Pleiades Publishing, Ltd.  
Distributed worldwide by Springer. *Journal of Evolutionary Biochemistry and Physiology*  
ISSN 0022-0930.

---

## Reviews

Neurophysiological Mechanisms of Respiratory Activity in Cyclostomes and Fish during Aquatic Breathing

*E. E. Kolesnikova* 85

---

## Comparative and Ontogenetic Biochemistry

Activation of Fas Receptors, Caspase-8 and Caspase-3 by Fluoride Ions in Rat Erythrocytes *in vitro*

*N. A. Agalakova, T. I. Petrova, and G. P. Gusev* 97

Fatty Acid Content of Structural and Storage Lipids in Muscles of the Daubed Shanny Postlarvae *Leptoclinus maculatus* (Fries, 1838) from Kongsfjord (Svalbard Archipelago)

*S. N. Pekkoeva, S. A. Murzina, Z. A. Nefedova, S. Falk-Petersen,  
J. Berge, O. J. Lønne, and N. N. Nemova* 104

The Rat (*Rattus norvegicus*) as a Model Object for Acute Organophosphate Poisoning.  
1. Biochemical Aspects

*N. V. Goncharov, M. A. Terpilowski, V. I. Shmurak, D. A. Belinskaya, and P. V. Avdonin* 112

---

## Comparative and Ontogenetic Physiology

Dipeptides Beta-L-Aspartyl-Serine and Beta-L-Aspartyl-Proline in Memory Regulation in the Honeybee

*N. I. Chalisova, T. G. Zacheplilo, N. G. Kamyshev, and N. G. Lopatina* 124

Involvement of Group II Metabotropic Glutamate Receptors in Modulation of Evoked Activity in Frog Spinal Motoneurons

*N. M. Chmykhova, S. O. Gapanovich, E. N. Pariyskaya, and N. P. Veselkin* 131

---

## **Morphological Basics for Evolution of Functions**

Evolutionary Origins of Transventricular Transmission of Hypothalamic Hormones and Neuromodulatory Substances

*M. G. Belekhova, N. B. Kenigfest, E. V. Chernigovskaya, and N. M. Chmykhova*

140

Structural Organization of Astrocytes in the Subgranular Zone of the Rabbit Hippocampal Dentate Fascia

*E. G. Sukhorukova, O. V. Kirik, D. A. Sufieva, O. S. Alekseeva, and D. E. Korzhevskii*

148

---

## **Short Communications**

Glucose Absorption in the Rat Small Intestine under Experimental Type 2 Diabetes Mellitus

*L. V. Gromova, A. S. Polozov, O. V. Kornyushin, N. M. Grefner,  
Yu. V. Dmitrieva, A. S. Alekseeva, and A. A. Gruzdkov*

155

Changes in Vesicular Transport of a Model Fluorescent Protein in the Renal Proximal Tubular Epithelium of the Frog *Rana temporaria* after Lysozyme Loading

*N. P. Prutskova and E. V. Seliverstova*

158

---

---