

# Table of Contents

## “Problems of Cryobiology” Year 2009

### Contents of Issue 1/2009

#### Theoretical and Experimental Cryobiology

<i>Grigoryan K.R., Markarian S.A., Aznauryan M.G.</i> Effect of Dimethyl Sulfoxide and Diethyl Sulfoxide on Thermal Denaturation of Human Serum Albumin .....	3
<i>Repin N.V., Kiroshka V.V., Golovko O.I.</i> Analysis of Morphology of Erythrocytes and Their Resistance Depending on pH and Ionic Strength under Hypothermal Storage .....	10
<i>Gulevsky A.K., Relina L.I.</i> Antifreeze Proteins. Report I. Classification and Mechanism of Action .....	18
<i>Kovalenko I.F., Koschiy S.V., Timofeyeva E.V., Sakun A.V., Kovalenko S.Ye., Vysekantsev I.P., Rozanov L.F.</i> Permeability of SPEV Cell Membranes For Water and DMSO Molecules .....	25
<i>Nardid O.A.</i> EPR Study of Freezing Effect on Structural-Functional State of Mitochondrial Membrane.....	
<i>Sakun O.V., Maruschenko V.V., Kovalenko I.F., Sirenko A.Yu., Vysekantsev I.P., Davydova O.V., Gordiyenko O.I.</i> Temperature Effect on Membrane Permeability Coefficients of Yeast-Like Fungi <i>Saccharomyces cerevisiae</i> for Water and Cryoprotectants .....	32
<i>Shpakova N.M., Pisarenko N.A., Orlova N.V.</i> Effect of Equine Erythrocyte Incubation at 49°C on Amphiphil Substance Efficiency Under Hypertonic Stress Conditions .....	41
	49

#### Cryopreservation of Biological Systems

<i>Chadaev V.E.</i> Effect of Dimexide on Functional Characteristics of Rabbit Testicular Tissue .....	56
<i>Pakhomov A.V., Bozhok G.A., Gurina T.M.</i> Study of Steroidogenic Potential of Post-Thaw Biological Material of Mature Rats' Testes .....	63

#### Cryomedicine, Clinical and Experimental Transplantology

<i>Tsutsayeva A.A., Chernousova S.S., Glushko T.A., Shatilova L.E., Volina V.V., Sokol L.V., Ivakhnenko L.Yu., Chernyshenko L.G., Brovko E.V.</i> Effect of Cryopreserved Bone Marrow Transplantation on Dynamics of Recovery of Morphofunctional Properties of Lymphoid, Myeloid and Endocrine Organs in Lethally Irradiated Recipients .....	71
<i>Grischenko V.I., Chadayev V.E., Volina V.V.</i> Allograft Transplantation of Cryopreserved Testicular Tissue as the Way to Correct Rabbit Testes Hypofunction .....	88
<i>Tsutsayeva A.A., Volina V.V., Sokol L.V., Zhulikov O.A.</i> Effect of Human Cord Blood Leukoconcentrate on Skin Regenerative Activity in Culture <i>In Vitro</i> .....	93

Key Word Index, “Problems of Cryobiology”, Volume 18.....	100
Table of Contents, “Problems of Cryobiology”, Volume 18.....	108

Instructions to the Authors .....	118
-----------------------------------	-----

### Contents of Issue 2/2009

#### Theoretical and Experimental Cryobiology

<i>Gulevsky A.K., Relina L.I.</i> Antifreeze Proteins. Report II: Occurrence in Nature.....	121
<i>Chernobay N.A., Kovalenko I.F., Koschiy S.V., Rozanov L.F.</i> Dependence of Permeability of SPEV Cell Membranes for Molecules of Ethylene Glycol and 1,2-Butane Diol on Temperature.....	137
<i>Babichuk V.G.</i> Quantitative Estimation of Antigen-Specific Cells in Human Blood After Rhythmic Cold Effect.....	143
<i>Mikson K.B., Kopeika E.F., Linnik T.P.</i> Conditions for Loach ( <i>Misgurnus fossilis</i> ) Embryo Vitrification in Cryoprotective Media.....	154

<i>Todrin A.F., Popivnenko L.I., Kovalenko S.Ye.</i> Thermophysical Properties of Cryoprotectants. I. Temperature and Heat of Melting.....	163
<i>Nardid O.A.</i> Study of Low-Molecular Effect of Cryoprotectants on Mitochondria Respiratory Chain by Spin Probe EPR.....	177
<i>Goltsev A.N., Dubrava T.G., Ostankova L.V., Grischenko V.I., Yampolskaya E.Ye., Ostankov M.V., Bondarovich N.A., Sirous M.A.</i> Peculiarities of Cryopreservation Effect on Functional Potential of Fetal Liver Hemopoietic Stem Cells of Various Gestation Terms.....	186

### **Cryomedicine, Clinical and Experimental Transplantology**

<i>Pyatikop V.A.</i> Effect of Introduction of Neuronal Pathway-Induced Bone Marrow Stromal Cells on Recovery of Movement Impairments and Dopamine Level in Brain Structure of Rats with Parkinson-Like Syndrome.....	200
---	-----

Abstracts of the Conference of Young Scientists “Cold in Biology and Medicine 2009”.....	207
Instructions to the Authors .....	240

## **Contents of Issue 3/2009**

### **Theoretical and Experimental Cryobiology**

<i>Markova K.V., Ramazanov V.V., Bondarenko V.A.</i> Osmotic Effect on Human Erythrocyte Detergent Lysis.....	243
<i>Astaeva M.D., Abdullaev V.P., Klichkhanov N.K.</i> Influence of Hypothermia on Intensity of Oxidative Modification of Ground Squirrels’ Blood Plasma Proteins.....	254
<i>Davydova E.V., Gordienko O.I.</i> Temperature Effect on Erythrocyte Membrane Permeability for Cryoprotectants with Different Hydrophobicities.....	261
<i>Gulevsky A.K., Relina L.I.</i> Antifreeze Proteins. Report III: Regulation, Origin, Stability and Application.....	273
<i>Dyakonenko G.Yu., Lysak Yu.S., Kompaniets A.M.</i> Effect of Rape Seeds’ Pre-sowing Treatment With Complex Cryoprotectant-Based Agrochemical Preparations on Plant Winter Hardiness and Yielding Capacity.....	283
<i>Soldatov A.A., Parfyonova I.A.</i> Oxygen Tension in Blood, Skeletal Muscles and Tissue Metabolism Peculiarities of <i>Liza aurata</i> Risso Under Experimental Hypothermia.....	290
<i>Marchenko V.S., Marchenko L.N., Yermakova N.Yu., Sleta I.V., Sandomirsky B.P.</i> Effect of Cryoapplication on Fractal Organization of Ultrastructure of Parodontium Soft Tissues in Destruction and Penumbra Zones.....	301
<i>Ramazanov V.V., Bondarenko V.A.</i> Manifestation and Elimination of “Packing” Effect in the Media with Non-Penetrative and Penetrative Cryoprotectants.....	312
<i>Bogdanchikova O.A., Kompaniets A.M.</i> Platelet Cryopreservation. 1. Development of Cryopreservative Solutions, Based on Cryoprotectant Combination and Study of Their Efficiency.....	324

### **Cryopreservation of Biological Systems**

<i>Gorbunov L.V., Shiyanova T.P.</i> Cryopreservation of Fruit-Berry Culture Cuttings.....	338
--	-----

### **Cryomedicine, Clinical and Experimental Transplantology**

<i>Gladkikh D.P., Goltsev A.N.</i> Estimation of Therapeutic Potential of Fetal Liver Cryopreserved Cells in Model of Experimental Autoimmune Thyroiditis.....	349
<i>Gulevsky A.K., Grischenko V.I., Ivanov E.G.</i> Stimulation of Reparative Regeneration of Articular Cartilage Under the Effect of Cord Blood Low Molecular Fraction (below 5 kDa).....	362
<i>Shinder A.V., Galchenko S.Ye., Ostankova L.V., Synchykova O.P.</i> Dynamics of Healing of Skin Cold Wounds, Lipid Peroxidation Level and Leucocyte Profile of Rat’s Blood Against the Background of Animal Extract Introduction.....	369

### **Short Communications**

<i>Ostashko F.I., Ostashko V.F.</i> Ways To Improve Media for Culturing and Preservation of Sexual Cells.....	375
10 <sup>th</sup> Ukrainian Biochemical Congress.....	378
Instructions to the Authors .....	379

## Contents of Issue 4/2009

### Theoretical and Experimental Cryobiology

<i>Linnik T.P., Martynyuk I.N., Gaviley O.V., Beletsky E.M.</i> Cytotoxic Effect of Diols, Amides and Their Mixtures on Fowl and Turkey Sperm Prior to Freezing .....	383
<i>Gulevsky A.K., Trifonova A.V., Petrenko T.F.</i> Stimulating Effect of Low-Molecular Fraction from Cord Blood on Adhesion and Proliferation of Human Fibroblast Culture After Cryopreservation .....	395
<i>Aleksandrova D.I., Orlova N.V., Shpakova N.M.</i> Initial State of Erythrocytes as Factor, Determining Their Sensibility to Hypertonic Stress. Role of PEO-1500 and Temperature .....	406
<i>Kovalenko G.V., Kovalenko I.F., Linnik T.P., Koshchiy S.V.</i> Diffusion of Poly-Atom Alcohols and Their Methoxyderivatives via Rat and Rabbit Erythrocyte Membranes .....	413
<i>Lomako V.V., Shilo A.V.</i> Effect of General Cooling on Rat Behaviour in “Open Field” Test .....	421
<i>Ostankov M.V., Lebedinets D.B., Porozhan E.A., Goltsev A.N.</i> Effect of Cryopreservation Factors on Cytomorphologic and Structural Characteristics of Fetal Nerve Cells .....	431
<i>Samokhina L.M.</i> Elastases at Natural Hybernation in Hamsters .....	438
<i>Shpakova N.M.</i> Feasible Mechanism of Osmotic and Temperature Sensitivity Correction of Human Erythrocytes Using Alkyl- $\beta$ ,D-Glucopyranosides .....	449
<i>Vyazovskaya O.V., Mazalov V.K., Kompaniets A.M.</i> Structural and Functional Peculiarities of Cold Receptors .....	461
<i>Gorbunov L.V.</i> Reproducibility Results for Cryopreservation of Different Variety Cuttings of Pomefruit Trees .....	473

### Cryomedicine, Clinical and Experimental Transplantology

<i>Gulevsky A.K., Ivanov Ye.G.</i> Combined Effect of Low Temperatures and Low Molecular Fraction (Below 5 kDa) of Cord Blood in Recovering Processes in Cartilage Tissue .....	481
---	-----

### Cryogenic Equipment

<i>Osetsky A.I., Grischenko V.I., Goltsev A.N., Kravchenko M.A., Stryuchkova E.V.</i> Cryogenic Technologies in Production of Pharmaceutical, Cosmetic, Agrotechnical Formulations and Biologically Active Food Additives.....	488
--	-----

### Short Communications

<i>Grischenko V.I., Chadaev V.Ye., Volina V.V., Batsunova L.V.</i> Study of Effect of Cryopreserved Testicular Tissue Allotransplantation on Reproductive Function of Rabbits with Testes Hypofunction .....	500
--	-----

Key Word Index, “Problems of Cryobiology”, Year 2009.....	503
---	-----

Table of Contents, “Problems of Cryobiology”, Year 2009.....	510
--	-----

Instructions to the Authors .....	516
-----------------------------------	-----