

Russian Academy of Medical Sciences  
Medical-Biological Department  
International Academy of Science  
P.K.Anokhin Institute of Normal Physiology RAMS  
I.M.Sechenov First Moscow Medical University  
Russian Neurochemical Society  
Russian Physiological Society (Moscow branch)  
Scientific Council of Experimental and Applied physiology



1<sup>st</sup> International Interdisciplinary Conference on  
**MODERN PROBLEMS IN SYSTEMIC REGULATION  
OF PHYSIOLOGICAL FUNCTIONS**

Conference program

*Safaga (Egypt), 10-21 December, 2010*



Sherstnev V.V. Professor  
Academician of International Academy of Science  
Chairman of Moscow Branch Russian Neurochemical Society  
Head of Laboratory Functional Neurochemistry,  
P.K.Anokhin Institute of Normal Physiology RAMS

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**Place:**

Safaga (Egypt)

**Time:**

10-21, December, 2010

**11, December, 2010**

Registration of participants

Open ceremony – Correspondance member of RAMS Sudakov S.K.

Plenary Lecture – Academician RAMS Sudakov K.V.  
“**Functional systems in the organization of behavior and  
psychic activity**»

**12, December, 2010**

**Session 1**

**“IMMUNE MECHANISMS IN SYSTEMIC REGULATION OF PHYSIOLOGICAL FUNCTIONS”**

**Chairmen:** – Academician RAMS Zilov V.G.  
– Professor Sherstnev V.V.

Tolpygo S.M., Pevtsova E.I., Kotov A.V.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Autoimmune mechanisms of alcohol dependence development”

Shashukova A.V.

MIC “Immunculus», Moscow, Russia  
“Autoantibodies in physiology and pathology”

Elistratova E.I., Gruden M.A., Sherstnev V.V.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Neuroimmune mechanisms of cerebrovascular disorders”

Kalinichenko L.S., Pertsov S.S., Koplík E.V.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“A comparative study of the effects of interleukin-1 $\beta$  and interleukin-4 on  
serum albumin parameters in rats with various behavioral characteristics”

Meshcheryakov A.F.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Mechanisms of dependent behavior: influence of cytokines (interleukin-1 $\beta$  and  
interleukin-4)”

Kosyreva A.M., Makarova O.V., Simonova E.Yu., Tsvetkov I.S.

Research Institute of Human Morphology RAMS, Moscow, Russia  
“Sex differences of the immune system reaction of Wistar rats to acute  
endotoxycosis”

**Discussion**

13, December, 2010

Section 2

“SYSTEMIC MECHANISMS OF PSYCHOEMOTIONAL STRESS”

**Chairmen:** – Professor Uymatov E.A.  
– MD, Pertsov S.S.

*Bashkatova V.G.*

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Interaction of peripheral and central mu-opioid systems in physiological mechanisms of emotional stress”

*Sollertinskaja T.N., Shorochov M.V.*

Sechenov Institute of Evolutionary Physiology and Biochemistry RAS,  
St.-Petersburg, Russia  
“The evolutionary peculiarities of peptide stress compensations in the ascending row of mammals”

*Pertsov S.S., Koplík E.V., Kalinichenko L.S.*

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Role of interleukin-1 $\beta$  in the regulation of oxidative processes in the brain of rats with differing resistance to emotional stress”

*Koplík E.V., Pertsov S.S., Ivanova E.A.\**

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
\*I.M.Sechenov First Moscow Medical University, Moscow, Russia  
“Effect of interleukin-1 $\beta$  on morphological characteristics of mesenteric lymph nodes tracts of rats during acute emotional stress”

*Kravtsov A.N., Umryukhin P.E., Sotnikov S.V., Chekmareva N.Yu., Umryukhin A.E.*

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
I.M.Sechenov First Moscow Medical University, Moscow, Russia  
“Interleukin-4 and the TNF serum content in rats with different behavioral activity after immobilization stress”

*Smetanina M.D., Shorina L.D., Mironova I.K. Petrov V.V.*

N.G.Chernyshevsky Saratov State University, Saratov, Russia  
“Influence of pantholen on blood parameters in rats in normal conditions and stress”

*Fudin N.A., Klassina S.Ya.*

P.K.Anokhin Institute of Normal Physiology, Moscow, Russia  
“Systemic mode for autonomic and metabolic disorders recovery of persons being exposed to unhealthy stress and ecological factors”

**Discussion**

**14, December, 2010**  
**SYMPOSIUM**  
**“GENETIC MECHANISMS OF MEMORY”**  
**Part 1**

**Chairmen:** – Professor Tarantul V.Z.  
– Docent Zarayaskaya I.Yu.

Sherstnev V.V., Gruden M.A., Golubeva O.N., Bogach V.N., Storogeva Z.I.  
P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Cell proliferation and differentiation in adult brain structures associated with learning and memory”

Anokhin K.V.  
P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Common and different features of primary and secondary systemogenesis”

Kuzin A.V.  
Institut für Molecular- und System-Medizin, Berlin, Germany  
“Ensemble co-interactions in the central nervous system”

Lazutkin A.A., Ivanova A.A., Zarayskaya I.Yu.  
P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Induction of the expression of transcriptional factors c-Fos and Zif/268 in mouse forebrain during the perinatal period”

Ivashkina O.I., Bezriadnov D.V., Anokhin K.V.  
P.K.Anokhin Institute of Normal Physiology RAMS  
“Activation of brain DNA synthesis and amnestic effects of halogenated nucleotide analogues in the passive avoidance learning task in mice”

Mineyeva O.A., Efimova O.I., Anokhin K.V.  
P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“The effect of learning on DNA synthesis in adult mouse brain”

**Discussion**

**15, December, 2010**

**SYMPOSIUMM**  
**“GENETIC MECHANISMS OF MEMORY”**

**Part 2**

**Chairmen:** – Correspondence member of RAN and RAMS Anokhin K.V.  
– Nikitin V.P. MD.

Chekhov S.A., Bezriadnov D.V., Ivashkina O.I., Anokhin K.V.  
P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“Comparison of hippocampal neuronal populations that are involved in formation of spatial and nonspatial memory in mice”

Bezriadnov D.V., Ivashkina O.I., Anokhin K.V.  
P.K.Anokhin Institute of Normal Physiology, Moscow, Russia  
“Memory trace instability as a basis for reconsolidation in the Morris water maze task”

Tiunova A.A., Komissarova N.V., Anokhin K.V.  
P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia  
“System reorganization of the neuronal substrates for memory storage and retrieval”

Nikitin V.P., Solntseva S.B., Kozyrev S.A.  
P.K.Anokhin Institute of Normal Physiology RAMS  
“Storage mechanisms for long-term memory and amnesia in snail *Helix pomatia*”

Efimova O.I., Anokhin K.V.  
P.K.Anokhin Research Institute of Normal Physiology RAMS, Moscow, Russia  
“DNA-dependent mechanisms of long-term memory in molluscs”

**Discussion**

**16, December, 2010**  
**SESSION 3**  
**“SYSTEMATIC MECHANISMS OF BEHAVIOUR”**

**Chairmen:** – Correspondence member of RAMS Sudakov S.K.  
– Professor Rayevsky V.V.

Zhuravlev B.V.  
P.K.Anokhin Institute of Normal Physiology RAMS Moscow, Russia  
“Neural mechanisms of learning in animals”

Raevsky V.V., Podkletnova I.M.  
Institute of Higher Nervous Activity and Neurophysiology RAS, Moscow, Russia  
“Behavioural alterations and reduction of GABA-ergic transmission after neonatal 6-OHDA treatment in rats”

Belyakova A.S., Voskresenskaya O.G., Kamensky A.A.

Biological Faculty, M.V.Lomonosov Moscow State University, Moscow, Russia

“Influence of the original structural analogue AVP (6-9), Ac-D-SPRG, on production of the conditioned reflex of active avoidance to painful stimulus”

Pevtsova E.I., Kotov A.V., Tolpygo S.M.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Protein-peptide complexes of angiotensins in system organization of goal-directed drinking behavior”

Zots M.A., Zarayskaya I.Yu.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Mice behavior in the presence of predator odor is dependent on early encounter with it”

Alexandrova E.A., Solovjeva N.A., Lazutkin A.A., Ivanova A.A., Zots M.A., Burenkova O.V., Zarayskaya I.Yu.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Epigenetic mechanisms in processes of systemogenesis”

Murashev A.N.

Branch of the Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, Pushchino, Moscow region, Russia

“In vivo models and their adequacy for studying physiological function”

Alchinova I.B., Arkhipova E.N., Lysenko N.P.\*, Khlebnikova N.N.

Institute of General Pathology and Pathophysiology RAMS, Moscow, Russia

\*K.I.Skryabin Academy of Veterinary Medicine and Biotechnology, Moscow, Russia

“Analysis of cellular metabolic reactions in irradiated mice of different strains”

Abramova A.Yu., Nikenina E.V.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“The learning of rats during nociceptive reinforcement in the tail-flick test according to their behavior in the open-field test”

## Discussion

**17, December, 2010**

**Session 4**

**“SYSTEMATIC MECHANISMS OF HUMAN RESULTATIVE ACTIVITY”**

**Chairmen:** – Academician RAMS Aphtanas L.I.  
– Correspondence member of RAMS Fudin N.A.

Fudin N.A., Khadartsev A.A.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Physico-biological ensurance of tphysical culture and the high achievement in sport”

Fudin N.A., Sudakov K.V., Gumenuk V.A., Klassina S.Ya., Cherkasov A.D.,  
Ivanov V.M.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Methodical aspects of studying sport activity systemic mechanisms”

Cherkasov A.D.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Prophylaxis of spastic states in muscles as a method for increasing productive activity of the sportsmen”

Murtazina E.P., Zhuravlev B.V., Berkhina A.G., Golubeva N.K., Sytkov V.V.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Systems analysis of neurophysiological mechanisms of human’s decision-making processes under conditions of free choice of testing parameters”

Andrianov V.V.\*, Vasilyuk N.A.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

\*I.M.Sechenov First Moscow Medical University, Moscow, Russia

“Dynamics of heart rhythm of the subjects in the performance of visual-motor design tasks”

Yumatov E.A.

I.M.Sechenov First Moscow Medical University, Moscow, Russia

“The system organization of resulting educational process”

Arkhipova E.N., Antonova N.P., Torshin V.I.\*

Institute of General Pathology and Pathophysiology RAMS, Moscow, Russia

\*Peoples’ Friendship University of Russia, Moscow, Russia

“Endogenous intoxication of the organism as an indicator of insufficiency of adaptive resources”

Bayguzhin P.A.

Chelyabinsk State Pedagogical University, Chelyabinsk, Russia

“Individually-typological features of reacton of an student organism in the model of a mental load”

## Discussion

18, December, 2010

Session 5

“SYSTEMIC MECHANISMS OF VEGETATIVE FUNCTION’S REGULATION”

**Chairmen:** – Academician RAN and RAMS Ugrumov M.V.  
– Professor Kromin A.A.

Saifetyarova Yu.Yu., Sapronova A.Ya., Ugrumov M.V.

N.K.Koltsov Institute of Developmental Biology RAS, Moscow, Russia

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“The brain is the main source of blood dopamine in neonatal rats”

Sarkisyan K.H., Skorobogatova T.A., Oganova, G.M., Ivashev M.N.

Pyatigorsk State Pharmaceutical Academy, Pyatigorsk, Russia

“Regulation chronotropic cardiac function”

Kromin A.A., Ignatova Yu.P.

Tver State Medical Academy, Tver, Russia

“The reflection of artificially induced and amplified alimentary motivation in patterns of impulse activity of chewing muscles of rabbits during electrostimulation of “the hunger centre” of the lateral hypothalamus”

Yusifova S.H.\*, Hasanova G.A., Ismayilov T.M., Valadov A.E.

Problem Research Laboratory of Neurophysiology and Functional Neurochemistry and Department of Normal Physiology of the Azerbaijan Medical University, Baku, Azerbaijan

“Functional state of the conduction system of the heart during aminazine blockade of vagal inhibition of cardiac activity”

Savenko I.A., Sergienko A.V.

Pyatigorsk State Pharmaceutical Academy, Pyatigorsk, Russia

“Restoring the normal physiology of the gastric mucosa of rats with NSAID-induced ulcerogenesis drug kogitum”

Mikhailova A.G.<sup>1</sup>, Strukova S.M.<sup>2</sup>, Gorbacheva L.R.<sup>2</sup>, Savinkova I.V.<sup>2</sup>, Rumsh L.D.<sup>1</sup>

<sup>1</sup>Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry RAS, Moscow, Russia

<sup>2</sup>Lomonosov Moscow State University, Moscow, Russia

“Modulation of thrombin-activated receptor (PAR1 and PAR4) activation by enteropeptidase”

Lebedeva M.A.

Institute of General Pathology and Pathophysiology RAMS, Moscow, Russia

“Central regulation of breathing after blockade of inhibitory synaptic transmission”

Pankova N.B., Karganov M.Yu.

Institute of General Pathology and Pathophysiology RAMS, Moscow, Russia

“Changes in parameters of functional activity of cardiovascular system autonomic regulation in 13-16-year-old pre-hypertensive adolescents”

Alizadeh Z.T., Ibrahimova A.Sh., Hasanova G.A., Veliyeva G.C., Rustamova A.F.

Department of Normal Physiology of Azerbaijan Medical University, Baku,  
Azerbaijan

“Change in impulse activity of sensorimotor cortical and respiratory neurons  
in different functional states of cholinergic and adrenoreceptor activity”

### *Discussion*

*19, December, 2010*

**SYMPOSIUM**

**“REGULATIVE MECHANISMS OF COMPENSATORY PROCESSES”**

**Part 1**

**Charmen:** – Professor Robert D.E.Sewell  
– Davydova T.V., MD.

*Morozova-Roche L.A.*

Umea University, Sweden

“Amyloid structural polymorphism: implication for amyloid cytotoxicity and  
amyloid-induced autoimmune responses”

*Deptyarvea E.A.<sup>1</sup>, Pronina T.S.<sup>1,2</sup>, Ugrumov M.V.<sup>1,2</sup>*

<sup>1</sup>P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

<sup>2</sup>N.K.Koltsov Institute of Developmental Biology RAS, Moscow, Russia

“Compensatory changes in tuberoinfundibular dopaminergic neurons during  
neurodegenerative processes in mouse brain”

*Kozina E.A.<sup>1,2</sup>, Khaindrava V.G.<sup>2</sup>, Kudrin V.S.<sup>2,3</sup>, Ugrumov M.V.<sup>1,2</sup>*

<sup>1</sup>N.K.Koltsov Institute of Developmental Biology RAS, Moscow, Russia

<sup>2</sup>P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

<sup>3</sup>V.V.Zakusov Institute of Pharmacology RAMS, Moscow, Russia

“Structural and metabolic changes in central and peripheral catecholaminergic  
systems in models of the early stages of parkinsonism”

*Davydova T.V.*

Institute of General Pathology and Pathophysiology RAMS, Moscow, Russia

“Neuroprotective effects of glutamate antibodies in brain neurodegenerative  
disorders”

*Sewell R.D.E.<sup>1</sup>, Gruden M.A.<sup>2</sup>*

<sup>1</sup>Welsh School of Pharmacy, Cardiff University, United Kingdom

<sup>2</sup>P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Novel drug approaches to neurodegeneration”

*Dorogovtsev V.N.*

Principal Military Hospital, Angola

“Importance of physiological functional system’s regulation at the beginning of essential hypertension pathogenesis”

Gruden M.A., Sherstnev V.V.

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Molecular indicators of cognitive function in normal conditions and in acute or chronic brain ischemia”

Olinevitch V.B.<sup>1</sup>, Gruden M.A.<sup>2</sup>, Sherstnev V.V.

<sup>1</sup>Mositalmed, Moscow, Russia

<sup>2</sup>P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Retinal cell development and death in acute ischemia and the action of peptide ligands to protein”

Ivanov A.V., Smirnova O.A., Ivanova O.N., Kochetkov S.N.

V.A.Engelhardt Institute of Molecular Biology RAS, Moscow, Russia

“Studies of oxidative stress caused by hepatitis C virus proteins”

Gelashvili T.P., Gelashvili E.P.

Samara State Medical University, Samara, Russia

“Possibilities of application of indicators of a phonobronchography in preterm infants as a reflexion of adaptation in the conditions of respiratory support”

Khakimova G.R., Kozina E.A., Sapronova A.Ya., Ugrumov M.V.

N.K.Koltsov Institute of Developmental Biology RAS, Moscow, Russia

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Functional activity of the nigrostriatal dopaminergic system as an index of compensatory capacities of the brain in models of Parkinson’s disease”

## Discussion

**20, December, 2010**

**SYMPOSIUM**

**“REGULATIVE MECHANISMS OF COMPENSATORY PROCESSES”**

**Part 2**

**Chairmen:** – Correspondence member RAN Grishin E.V.  
– Nikitin V.P., MD.

Grishin E.V.

<sup>1</sup>Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry RAS, Moscow, Russia

“Modulation of neuronal receptors by neurotrophic factors”

*Sudakov S.K.*

P.K.Anokhin Institute of Normal Physiology RAMS, Moscow, Russia

“Interaction of central and peripheral components of neurochemical systems”

*Demkin V.V.<sup>1</sup>*, *Kirillova N.V.<sup>1</sup>*, *Sadokhina T.S.<sup>1</sup>*, *Kurinov A.M.<sup>1</sup>*, *Slesarev A.I.<sup>2,3</sup>*

<sup>1</sup>Institute of Molecular Genetics RAS, Moscow, Russia

<sup>2</sup>University of Maryland School of Medicine, Baltimore, Maryland, USA

<sup>3</sup>Fidelity Systems, Inc., Gaithersburg, Maryland, USA

“A New Approach to Analysis of the Human Microbiome”

*Gottikh M.B.*

M.V.Lomonosov Moscow State University, Moscow, Russia

“Use of Chimeric Proteins for Directed DNA Integration into the human genome”

*Kazakov A.A.<sup>1</sup>*, *Gening L.V.<sup>1</sup>*, *Grishina E.E.<sup>2</sup>*, *Tarantul V.Z.<sup>1</sup>*

<sup>1</sup>Institute of Molecular Genetics RAS, Moscow, Russia

<sup>2</sup>Moscow Ophthalmologic Hospital, Moscow, Russia

“Influence of human cell malignancy on the activity of DNA polymerase iota in tissue extracts”

*Agapkina Yu.Yu.*

Lomonosov Moscow State University, Chemistry Department, Moscow, Russia

“Regulation of the HIV-1 integrase activity by modified oligonucleotides”

*Zolotov N.N.*, *Voronina T.A.*, *Seredenin S.B.*

V.V.Zakusov Institute of Pharmacology RAMS, Moscow, Russia

“Proline specific peptidases for neuropeptide control and drug development”

*Khlebnikova N.N.*, *Krupina N.A.*, *Kushnareva E.A.*

Institute of General Pathology and Pathophysiology RAMS, Moscow, Russia

“Proline-specific peptidases are involved in mechanisms of depression and anxiety”

## Discussion

CLOSE OF CONFERENCE