

## Research Institute of Physiology n.a. A.I.Karaev, National Academy of Sciences, Baku

Technical Area Keywords: Biotechnologies, Agricultural Sciences & Medicine.



### General Information

The Research Institute of Physiology n.a. A.I.Karaev in Baku is the leading Azerbaijan scientific center for physiological and biochemical studies of brain functions. During many years the Institute's staff has been realizing studies in the field of neurophysiology and biochemistry of mechanisms underlying memory processes, afferent projections from the retina to the brain visual centers, molecular mechanisms of reproduction, physiological basis of longevity, clinical neurophysiology, functional cytochemistry of starvation, ecological physiology and mechanisms of adaptation to adverse environmental factors, formation of brain functions in ontogenesis, biophysics of cellular membranes.

### Institute's Focus

- Neurophysiological studies of the brain functions
- Neurochemical studies of the brain functions in evolution
- Impact of adverse environmental factors on biochemical, genotoxic and histological indexes in tissues and electrophysiological processes in the brain
- Physiological basis of adaptation and longevity

### Valuable Technology Offerings

The Department of Physiology of Longevity carries out the studies showing antitoxic and life-lasting activity of licorice root. The Department of Ecological Physiology & Toxicology has purified two novel serotonin-modulating proteins (SMP-69 and SMAP)

from the rat brains and studied their physico-chemical properties and functions in memory formation. The Department elaborated a novel biomarker, based on measuring the level of SMAP protein in the animal tissues.

The Department of Biophysics studies the effect of electromagnetic irradiation on lipid peroxidation processes.

Anti-trypsin protein was purified from the animal blood which could be used in surgical operations.

In electrophysiological studies the hypothalamic neurons specifically responding to the alcohol and drug addiction preparations are revealed.

### Scientific Cooperation and Technology Transfer

Institute has scientific relations with scientific institutes both in Azerbaijan and abroad. Particularly, Institute conducts collaborative studies with the Institute of Physics (Baku), Institute of Normal Physiology (Moscow), Institute of Evolutionary Biochemistry and Physiology (St.Petersburg), Purdue University (USA), National Institute of Cancer (USA), New-York University (USA).

The Institute has got 10 patents for application of the results of its scientific studies into different fields: diagnostic tools for medicine, pharmacological preparations, etc

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