

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Multidisciplinary Space Life Sciences Research (8)

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MULTIDISCIPLINARY BIOMEDICAL RUSSIAN RESEARCH IN SPACE

Abstract

Institute of Biomedical problems has been organized in 1963 to conduct priority research in the domain of space biology and medicine and medical-and sanitary and hygienic support of spaceflights Since 1998 Institute has been assigned a leading role for conducting the work of medical and sanitary-hygienic health support of crews and developing scientific equipment used to handle the problems of medical support and realization of the Russian national program of biomedical research and experiments onboard Russian segment of the ISS. Scientific research carried out in real spaceflights is aimed primarily to:

- Identification of pattern, intensity, dynamics of structural-and-functional alterations induced by complex factors of spaceflight on organism (microgravity, pressurized confinement of spacecraft and artificial environment, radiation effects etc.);
- Identification of casual relationships leading to developing such alterations;
- Differential assessment of emerging alterations from the point of view of their adequacy to spaceflight conditions and prospects of returning to Earth;
- Development of necessary recommendations, methods and measures oriented at maintaining sufficient health and working capacity of human in respect to conditions of short- and long-duration spaceflights and during return to Earth.

Nevertheless activity of the Institute is not only confined to biomedical research. By applying systemic and innovational approaches in implementing scientific activity the Institute conducts multidisciplinary fundamental and exploratory studies in the area of medical sciences, radiation biology, engineering science, biotechnology etc, using various biological species and human subjects-volunteers. Studies onboard manned spacecrafts and onboard biological satellites as well as ground-based studies are conducted to obtain new data for enhancing system of medical support of spaceflights including prospects of missions to other planets as well as to resolve fundamental problems of gravitational physiology and biology, psychophysiology, radiation biology and also for developing and standardization of medical and scientific equipment. Integrated multidisciplinary research enable to bring space life sciences to the innovational level and further a more speedy and efficient settling the major scientific tasks.