

## REVIEW

on the project «Study of the radioprotective properties of Damage suppressor protein (Dsup) on a model object *D. melanogaster* and human cell culture HEK293T»

The project under consideration is at the intersection of classical radiobiology and modern molecular genetics and molecular biology. The introduction clearly summarizes the current state of the art in the study of the new Dsup protein. The purpose of the project is clearly defined and the relevance of the research topic proposed by the authors is not in doubt, since the problem of finding and studying radioprotectors is acute in biotechnology, medicine and various fields of fundamental biology.

The project aims to study the new Dsup protein, that has radioprotective properties, the studies of Dsup have been started recently, which gives the project authors the opportunity to make a significant contribution to the description of Dsup properties and mechanisms of action. To achieve this goal, it is proposed to solve a number of problems, many of which can be separate independent projects, however, the authors set themselves the ambitious goal to carry on a large number of technically complex experiments within the framework of one project. Of course, the level of knowledge and skills of the project team will allow them to do this within the stated period. It should be noted that the methods used to solve the problems of the project have been chosen correctly, moreover, they reflect the cutting edge of modern molecular biology and their total set is available to a very limited number of scientific teams.

The data obtained during the implementation of the project will have good novelty, since there are not even prerequisites for answers to some questions that will be solved in the project, and in light of the restrictions imposed by cosmic radiation on the presence of living organisms in space, they will be very timely. The scientific advantages of the project include the solution of problems at several levels at once: firstly, both at the cellular and organismic levels, and secondly, both at the phenotypic level and at the molecular level, which makes it possible to understand mechanisms of the studied processes. As a further continuation of the theme of the project, I can invite the authors to study the mechanisms of action of Dsup in compound with various mutations affecting the organization of DNA in the nucleus. I would also like to recommend the authors in the future to study the radioprotective properties of the Dsup protein not only in relation to ionizing radiation, but also in relation to ultraviolet radiation, which can also give interesting results.

The amount of funding requested for the implementation of the project meets the goals.



This project is of great interest both from practical and fundamental points of view, it certainly belongs to the field of research of the Joint Institute for Nuclear Research and, of course, should be fully supported.

Andreyan N. Osipov, PhD, DSc,  
Professor of the Russian Academy of Sciences  
Head of Experimental Radiobiology and  
Radiation Medicine Department  
State Research Center - Burnasyan Federal  
Medical Biophysical Center of  
Federal Medical Biological Agency.  
Zhivopisnaya, 46, Moscow, 123098, Russia  
Mobile.: +7 915 4373245  
Phone: + 7 499 1909683  
E-mail: andreyan.osipov@gmail.com

I hereby certify the authenticity of the signature of  
Andreyan N. Osipov

Evgeny V. Goloborodko, PhD  
Scientific Secretary of State Research Center  
Burnasyan Federal Medical Biophysical Center of  
Federal Medical Biological Agency

