



МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ
Федеральное государственное автономное образовательное учреждение высшего образования
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Referee report for the project

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

In a reviewed project, it is proposed for the first time to analyze the structure of Dsup protein to better understand the mechanism of its radioprotective action. The authors have already begun work in this direction and have shown that the studied protein has a secondary structure. Among many other methods, authors use SAXS, DLS and circular dichroism, which will allow describing the characteristics of the Dsup protein with various complementary methods. Therefore, there is no doubt that such an analysis will be carried out in this project in full and will provide new world-class data. In addition, to understand the effect of the Dsup protein in living cells in a human cell culture HEK293, resistance to the cytotoxic effect of proton radiation will be studied by assessing the metabolic activity of cells (MTT test) and induction of apoptosis (according to caspase-3/7 activity), determining the level of active forms oxygen in cells.

The obtained data will allow to characterize the radioprotective action of Dsup-protein and propose models of its action. It should be noted that the scientific content of the project meets high standards, and the proposed methodology is at the world level.

Scientific significance and novelty of the work. This project relates to the most advanced field of modern radiobiology and it is devoted to research of the new mechanisms of DNA protection from ionizing radiation that have not been studied yet. Therefore, the new data obtained during the implementation of the project will have both fundamental and applied nature.

Funding and employees. The amount of requested funding is in accordance with the declared experiments. High qualification of employees with academic degrees in the fields of molecular genetics and biophysics and the presence of graduate students and young specialists among the executives with confidence allows to say that the project is well provided with personnel and that it will be implemented and the results will be adequately published.

Conclusion. The researches declared in the project belong to the priority area, correspond to the world scientific level.

According to the ranking scheme, I propose categorized this project to A, as an excellent project, which should be fully funded with adequate resources, supported to continue and expand its scientific impact.

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