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The influence of mitochondrin-2 and cerebrolysin on the survival of *Drosophila melanogaster* individuals with the functional knockout of Sod1 gene in glia

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The detoxication of free radicals is carried out by the antioxidant system of protection which starting enzyme is superoxide dismutase (SOD). The functional knockout of Sod1 *Drosophila* gene in glia (UAS-Sod1-RNAi/Repo-Gal4) causes degenerative changes in the brain and decrease in viability. We studied the influence of the experimental agent of Mitochondrin-2 (M-2) and Cerobrolysin (C) on the viability of *Drosophila individuals* UAS-Sod1-RNAi/Repo-Gal4 under standard conditions and under of oxidative stress. 5% H₂O₂ solution was used as a prooxidant. M-2 and C were applied by method of larval feeding. On the standard medium the maximum life expectancy (MLE) of individuals of UAS-Sod1-RNAi/Repo-Gal4 did not exceed 35 days, the average life expectancy (ALE) was 16 days whereas the control ones reached 53 and 28 days respectively. After application of C the maximum life expectancy of UAS-Sod1-RNAi/Repo-Gal4 individuals was till 48 days and the average life expectancy to 28 after M-2 application to 53 and 34 days respectively. Neither M-2 nor C has a positive effect on survival in the conditions of induced oxidative stress. The percent of survival of UAS-Sod1-RNAi/Repo-Gal4 individuals under the effect of H₂O₂ made 42%. If M-2 was applied at the same time their survival decreased to 36% and after C to 19%. Studied drugs showed a positive effect on standard medium viability. M-2 was characterized by some best values in comparison with C. In case of oxidative stress development, the application of M-2 and C intensified their toxic effect especially strongly this property was shown by C.

Biography

Makarenko O M has completed his PhD degree at the Moscow Medical Stomatological Institute. He has completed his MD degree at the Institute of Higher Nervous Activity in Moscow. He carries out his Post-doctorate researches at the Institute of higher nervous activity and T G Shevchenko National University of Kiev. He is a Professor of the Psychology Department, the author of more than 100 articles in reputed journals and 4 monographs.

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