

Description for the general public

The project proposed the use of nanodiamonds as carriers of biologically active peptides through insect cuticle into its body, where peptide released from the complex will induce effects that reduce the viability and reproduction of insects. Previous studies showing the oostatic and hemocytotoxic effects of ovarian peptide hormone *Neb*-colloostatin in insects, suggest to undertake research on the biological activity of complexes of this peptide and more active *Neb*-colloostatin analogues with nanoparticles of diamond. The effect of these biocomplexes on feeding, immune response, reproduction and embryogenesis of *Tenebrio molitor* beetle will be investigated. The results of these studies will contribute to develop of the scientific basis of limiting viability and number of harmful insects using complexes of active synthetic peptides with carrier nanoparticles, which represents an innovative approach to the scientific basis for pest control. In the future, the results of proposed studies will contribute to design of new, selective bioinsecticides, that will be safe for the environment, animals and human.