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EFFECTS OF PEPTIDES DERIVED FROM THE ANTARCTIC SCALLOP ADAMUSSIUM COLBECKI ON OBESE RATS' ADIPOSE TISSUE HISTOPHYSIOLOGY

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ABSTRACT

The researchers have currently investigated the possibilities of organisms from extreme living conditions as sources to obtain active biomolecules for therapy of different metabolic diseases including obesity. The purpose of the present study was to evaluated the effect of functionally active peptides derived from the tissues of Antarctic scallop (PAS) Adamussium colbecki on rat`s visceral white adipose tissue (WAT) state during high-calorie diet-induced obesity development. It has been found that after daily oral administration of PAS at a dose of 5 mg•kg-1 of body weight for 6 weeks, obese rat`s WAT histophysiology was improved, which was manifested in the decline in chronic inflammation due to decrease in the relative visceral fat weight, the size of white adipocytes, the fibrosis level in WAT and the crown-like structure presence in comparison with the rats, which were on a high-calorie diet (HCD). In addition, the body weight gain and the mast cell number in WAT of the rats with PAS showed an intermediate value, as they did not differ from both control and HCD groups. These data allow suggesting that oral administration of PAS to obese rats affects WAT inflammatory state and, in particular, ameliorates complications after HCD intakes.