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BOOK OF ABSTRACTS



Effective current approaches
in anti-aging medicine
and gerontology

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UNIVERSAL MECHANISM OF PEPTIDE REGULATION OF GENE EXPRESSION, PROTEIN SYNTHESIS AND LIFE EXTENSION IN NATURE

Khavinson Vladimir

Saint Petersburg Institute of Bioregulation and Gerontology, Russia

Alteration in gene expression results in various pathologies and ageing. All functions of cells, organs and organisms are determined by gene expression and protein synthesis. Searching methods and means for regulation of gene expression is a key trend in basic science. The body itself contains principal regulatory substances high activity of which can contribute to the achievement of the upper species limit. A special place belongs to a group of peptides developed and studied by V. Khavinson and colleagues. The research was carried out on various species (plants, bacteria, insects, amphibians, birds, rodents, monkeys and humans). It demonstrated a significant increase in animals' average life expectancy as compared to control due to peptides' anti-carcinogenic activity, evidenced by a decreased incidence of malignant tumors. Application of pineal peptide promoted

reproductive system restoration in old female rats. In old monkeys administration of the pineal gland peptide resulted in restoration of melatonin secretion to the normal level of young animals, contributed to normalization of immune and endocrine systems. Peptides induced heterochromatin activation in cell nuclei of elderly people; increase in telomerase activity and telomeres' length in human fibroblasts; differentiation of poly potent frog cells; decreased number of chromosomal aberrations in bone marrow cells. Peptides are known to restore brain tissue functions in neurodegenerative diseases in Huntington's, Alzheimer's, Parkinson's diseases models. Molecular modeling helped identify peptides' large number of DNA binding options. A multi-year follow-up of elderly patients taking pineal and thymic peptides on annual basis evidenced the absence of any side effects and demonstrated a significant mortality reduction as compared to the control group.

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