

A new theory of control cell proliferation

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The most important mechanism of aging is slowing-down self-renovating cell proliferation with age. Summarizing both literature and own data we have proposed "The New Immune-Regulatory Theory of Aging". This theory core is that special subpopulations of T-lymphocytes regulate cellular proliferation of different tissues. Their activity decrease with age can represent central mechanism of self-renovating tissues aging, which is determined by exhaustion of hypothalamus centers regulatory influences after growth and development processes termination. This theory is proved by many experimental data and mathematic models. It was demonstrated that lymphocytes regulate cell growth and regeneration in liver, mucosa, skin etc. Transfer of hyperplastic reaction by lymphocytes is shown to be possible within isoproterenol-induced rodents salivary glands hypertrophy and heart functional hyperplasia. T-lymphocytes regulation of fibroblasts, osteoclasts and other cell types is known both in cell culture and organism. Lymphocytes transfer from healthy animals is shown to eliminate the common dwarf mice growth delay and T-lymphocytes have receptors to somatotropin, their number is higher during animals growth period. On mice and rats we investigated such lymphocytes-regulators effects as liver regeneration, sub maxillary salivary gland hyperplasia to high isoproterenol doses (Hans Selye phenomenon), tumor development regulation. Regulatory T-lymphocytes were extracted and investigated. Their reactivation possibility by different immune-pharmacological preparation is shown. Activation of whole cellular growth system, whose activity is lowered with age, is possible at different levels. Sharp increase of injures and burns healing rate within the method of transcranial electrostimulation of the brain, hypothalamus stimulation rejuvenating effects, embryonic transplantation of hypothalamus, hypophysis and thymus were shown.

Biography

Viacheslav N. Krutko did his Ph.D. from Institute of Medical and Biological Problems, Human and Animal Physiology, 1975; D.Sc. from Institute for Systems Analysis, System Analysis/Forecasting and Control of Public Health, 1993. He is the director of National Gerontology Center (Russia). He has published more than 15 books and 150 papers in reputed journals and serving as an editorial board member of repute.

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