

ABSTRACT

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Title:

Free radicals and aging I.

Aging process consists of progressive and irreversible processes in organelles, cells and entire organism, that lead to cumulation of changes responsible for activity reduction in physiological functions and increase sensitiveness to stress and illnesses. These are changes in important biomolecules like nucleic acids, proteins and lipids. Ideas of aging are very ambiguous and are changing in new studies, in which are more accurate, developed or adjust older studies.

A lot of aging theories were translated from the start of 20. century. None of them contained explanation of all changes in organism during lifetime. Only in 50th in 20th century Dr. Denham Harman came with theory about free radicals, which are to the fore for today's. This theory has defenders and opponents like each other. It suggests that aging process is cumulation of changes caused by very reactive particles called free radicals. Most important free radicals are hydrogen peroxide, superoxid, radical of hydroxyl and dioxide nitrogen, which are working like physiologically then pathogenic in organism.

For preserving level of free radicals with positive and negative effect, endogenous antioxidant mechanism in organism is responsible. Physiological effect of free radicals consists of signaling mechanism, correct function of enzymes and immune system. Pathogenous activities are causing evolution of illnesses including cancer and accelerate aging process in organism. Is in discussing to this days if free radicals are the main cause of aging and endogenous antioxidant preserve our body again ill-effects.