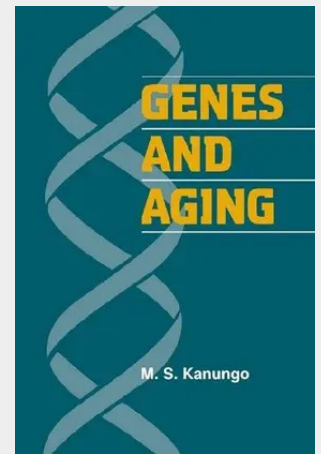


Genes and Aging

The maximum life span of multicellular organisms varies greatly: for a fruitfly it is about 30 days, for a dog about 20 years, and for a human about 100 years. Despite these differences, all animals show a similar pattern of their life spans - growth, adulthood, and aging, followed by death. The basic cause of aging in multicellular organisms (eukaryotes) lies at the level of the genes, although nutrition and various types of stresses do influence the rate and pattern of aging. This book reviews the molecular biology of the gene in relation to aging. Until about a decade ago it was not possible to probe into the types of changes that occur in eukaryotic genes, due to their enormous complexity. The use of genetic engineering techniques, however, is beginning to unravel the changes that occur in the genes as an organism ages: such as the changing expression of specific genes under normal conditions and under various types of stress, the changes in the regulatory roles of the sequences in the promotor regions of genes, conformational changes that may occur in genes during aging, and the protein factors that are involved in the aging process. The author presents basic information on eukaryotic genes and follows this with details of the changes that occur in their structure and function during aging. He reviews the latest studies being carried out in various laboratories, outlines the gaps and deficiencies in our present knowledge and suggests the most profitable future areas of research. Genes and Aging is for all students and researchers interested in the molecular biology of aging.

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