

Aging methods and protocols

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Abstrak

With rapidly rising life expectancies and a general lack of understanding about the aging process, the need to treat geriatric diseases is becoming an ever more significant private and public health issue. In *Aging Methods and Protocols*, Yvonne and Christopher Barnett and a team of recognized international experts detail key biochemical, analytical, and molecular techniques for the investigation of aging at the cellular, tissue, organ, and whole system levels. These cutting-edge methods address a wide range of research needs, from uncovering the factors associated with cell senescence and death, to exploring alterations in the body's ability both to metabolize xenobiotics, and to defend itself against biomolecular damage. State-of-the-art protocols also measure the morphological, functional, and molecular changes that accumulate within mitochondria over time, and permit the genetic and functional characteristics of the immune system to be determined. Two important case studies examine the role of dietary restriction on life span extension and the use of transgenic animals in the molecular analysis of aging. Wide ranging and highly practical, *Aging Methods and Protocols* provides today's molecular gerontologists, pharmacologists, and clinical investigators with a gold-standard collection of readily reproducible techniques for identifying those key cellular and molecular processes that might one day make it possible to regulate the aging process