

## **Abstract**

Cellular senescence is a state of the permanent cell cycle arrest caused by different stresses or cell to cell fusion. Senescent cells, unlike naturally aged cells, exhibit a specific phenotype, referred to as senescence associated phenotype (SASP). It is characterized by the production of biologically active substances such as interleukins, chemoattractants or proteases that affect their surroundings. Long-term survival of these cells in the body is the cause of age-related diseases. Under normal circumstances, number of senescent cells is maintained in the body by the immune system. However, the age-related abrogation of immune system function *per se* (immunosenescence) contributes to accumulation of senescent cells in tissues and aging of organism. This work describes origin, positive and negative effects of cell senescence, elimination of senescent cells by the immune system and current state of development of new substances causing specific lysis (killing) of senescent cells (senolytics).