

Special Issue

Cellular Senescence at the Crossroads: From Cancer Protection to Chronic Disease

Message from the Guest Editor

Cellular senescence has become a central concept in modern biomedicine. It is a true “Janus face”: in cancer, it can halt tumorigenesis by enforcing growth arrest, yet persistent senescent cells may later promote tumor progression through the SASP. In the cardiovascular system and in metabolic disease, senescence accelerates tissue dysfunction, fibrosis, and chronic inflammation, while in acute injury it can contribute to wound repair. This duality raises a pressing question: when is senescence protective, and when is it harmful? Therapeutic approaches such as senolytics, senomorphics, and reprogramming strategies are rapidly moving forward, and even widely used drugs like metformin, statins, or SGLT2 inhibitors show anti-senescent effects. Yet, translation is still uncertain. Which patient groups will benefit, at what stage of disease, and with which risks? This Special Issue invites contributions that address these unresolved challenges and help define the pathways toward clinically meaningful senescence-targeted interventions.

Guest Editor

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Deadline for manuscript submissions

28 February 2026



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/252802

*International Journal of
Molecular Sciences*
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