

## Special Issue

# Molecular and Cellular Pathways Involved in Age-Related Musculoskeletal Disorders

### Message from the Guest Editors

As advancements in the understanding of age-related changes in musculoskeletal health continue to evolve, it is crucial to gather comprehensive insights into the underlying molecular and cellular mechanisms. Age-related musculoskeletal disorders, such as osteoporosis, osteoarthritis, and sarcopenia, are driven by complex molecular and cellular pathways. Cellular senescence, characterized by an irreversible cell cycle arrest, plays a crucial role in these disorders by promoting chronic inflammation through the secretion of senescence-associated secretory phenotype (SASP) factors. Additionally, genetic mutations, telomere shortening, epigenetic alterations, mitochondrial damage, and oxidative stress contribute to the degeneration of musculoskeletal tissues with aging. These pathways disrupt bone homeostasis, leading to bone loss, muscle atrophy, and joint degeneration, significantly impacting the quality of life in the elderly. This Special Issue will highlight several molecular and cellular mechanisms involved with age-related musculoskeletal disorders.

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### Guest Editors

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The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

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