

Special Issue

Molecular Mechanisms and Microenvironmental Regulation in Bone-Related Diseases and Muscle Atrophy

Message from the Guest Editor

Bone-related diseases (osteoporosis, heterotopic ossification, osteoarthritis, osteosarcoma, bone metastasis) and muscle atrophy (sarcopenia, cachexia, disuse-induced wasting) are major health challenges with heavy societal and economic impacts. Despite advances, their molecular mechanisms and microenvironmental cues remain incompletely understood. This Special Issue offers a platform for original studies and reviews exploring molecular pathways (signaling, metabolic, genetic, epigenetic) and microenvironmental factors (ECM remodeling, vascularization, immune/inflammatory responses, cellular niches) in these disorders. It bridges fundamental biology and clinical applications to identify novel biomarkers, therapeutic targets, and regenerative strategies.

Topics include: Bone disease progression mechanisms
Muscle atrophy pathways
Inflammation, oxidative stress, immune roles
Exercise biology, mechanotransduction
Epigenetic/transcriptomic regulation in musculoskeletal pathology
Stem cell biology, regenerative approaches
Novel therapeutic targets, translational strategies
Clinical studies linking molecules to therapy outcomes
Original research and reviews are welcome.

Guest Editor

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Message from the Editorial Board

Biomolecules is a multidisciplinary open-access journal that reports on all aspects of research related to biogenic substances, from small molecules to complex polymers. We invite manuscripts of high scientific quality that pertain to the diverse aspects relevant to organic molecules, irrespective of the biological question or methodology. We aim for a competent, fair peer review and rapid publication. Please look at some of the exciting work that has been published in *Biomolecules* so far. We would be delighted to welcome you as one of our authors.

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