Special Issue

Molecular and Cellular Mechanisms of Intervertebral Disc Disease

Message from the Guest Editor

This Special Issue aims to explore recent advancements and comprehensive reviews in intervertebral disc biology, particularly focusing on disc degeneration and aging. Research topics of interest include, but are not limited to, the following:

- Molecular mechanisms underlying disc degeneration, including cellular senescence, apoptosis, ferroptosis, necrosis, inflammation, and oxidative stress.
- Cellular processes such as ECM remodeling mediated by matrix metalloproteinases (MMPs) and their inhibitors.
- The role of cytokines and growth factors in disc health and disease.
- Mechanisms influencing disc aging, nutrition, and mechanical integrity.
- Biomarkers for assessing disc degeneration progression and therapeutic response.
- Advances in understanding disc herniation and potential strategies for disc regeneration.

Contributions exploring new therapeutic avenues, including molecular targets, regenerative approaches, and innovative diagnostic techniques, are encouraged. Additionally, studies utilizing animal models and clinical trials aimed at validating therapeutic strategies for disc degeneration are welcome. We look forward to your valuable contributions to this Special Issue.

Guest Editor

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Message from the Editor-in-Chief

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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