

Special Issue

Bioengineering Cardiovascular Cell and Gene Therapies: Advances and Translational Challenges

Message from the Guest Editors

Cardiovascular diseases remain the leading cause of morbidity and mortality worldwide, driving the urgent need for innovative therapeutic strategies.

Bioengineering approaches, particularly in cell and gene therapy, hold great promise for advancing cardiovascular regeneration, repair, and disease treatment. Despite significant progress, the clinical translation of these therapies is hindered by challenges in the design of biomaterials, gene delivery, cell sourcing, scalability, and regulatory approval.

Addressing these hurdles requires an interdisciplinary effort that integrates bioengineering principles with cutting-edge biomedical research. This Special Issue invites researchers to submit original research articles and comprehensive reviews that explore novel bioengineering strategies to improve cardiovascular cell and gene therapies. Topics of interest include, but are not limited to, the following: Biomaterials and Scaffold; Gene Delivery Systems; Stem Cell and iPSC Technologies; Tissue Engineering and Organoid Model; Microfluidics and Organ-on-a-Chip Models; The Immunomodulation and Biocompatibility; Translational Barriers.

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Message from the Editor-in-Chief

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Editor-in-Chief

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