

Special Issue

Engineering Extracellular Matrix (ECM)-Based Scaffold Biomaterials for Cancer Treatment

Message from the Guest Editor

The extracellular matrix (ECM) is the non-cellular component of the tissue microenvironment and is made up of a complex network of proteins, polysaccharides, and various growth factors that provide structural support and biochemical cues to cells in the tissue to enable their proper growth and development. While the ECM has been extensively explored in the fields of tissue engineering and regenerative medicine, its use as a biomaterial scaffold in cancer treatment, particularly cancer immunotherapy, is now a matter of significant interest.

This Special Issue aims to showcase cutting-edge research and innovative strategies for using engineered ECM biomaterials for cancer treatment. The key areas of focus for this Special Issue include, but are not limited to, ECM-scaffold-based strategies for the infiltration and activation immune cells and the killing of tumor cells; ECM scaffolds or derived hydrogels for the localized and sustained delivery of immunomodulatory agents, checkpoint inhibitors, cytokines, and other anticancer agents; and organoid and 3D culture systems that use ECM to better model tumor microenvironments and evaluate therapeutic responses in vitro.

Guest Editor

Dr. Sanjay Pal

Cancer Biomaterials Engineering Section, Cancer Innovation Laboratory, Center for Cancer Research, National Cancer Institute, Frederick, MD 21702, USA

Deadline for manuscript submissions

31 August 2026



Biomedicines

an Open Access Journal
by MDPI

Impact Factor 4.5
CiteScore 7.8
Indexed in PubMed



mdpi.com/si/238380

Biomedicines
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
biomedicines@mdpi.com

[mdpi.com/journal/
biomedicines](https://mdpi.com/journal/biomedicines)





Biomedicines

an Open Access Journal
by MDPI

Impact Factor 4.5
CiteScore 7.8
Indexed in PubMed



[mdpi.com/journal/
biomedicines](https://mdpi.com/journal/biomedicines)



About the Journal

Message from the Editor-in-Chief

Biomedicines (ISSN 2227-9059) is an open access journal devoted to all aspects of research on human health and disease, the discovery and characterization of new therapeutic targets, therapeutic strategies, and research of naturally driven biomedicines, pharmaceuticals, and biopharmaceutical products. Topics include pathogenesis mechanisms of diseases, translational medical research, biomaterial in biomedical research, natural bioactive molecules, biologics, vaccines, gene therapies, cell-based therapies, targeted specific antibodies, recombinant therapeutic proteins, nanobiotechnology driven products, targeted therapy, bioimaging, biosensors, biomarkers, and biosimilars. The journal is open for publication of studies conducted at the basic science and preclinical research levels. We invite you to consider submitting your work to *Biomedicines*, be it original research, review articles, or developing Special Issues of current key topics.

Editor-in-Chief

Prof. Dr. Felipe Fregni

1. Neuromodulation Center and Center for Clinical Research Learning, Spaulding Rehabilitation Hospital and Massachusetts General Hospital, Harvard Medical School, Boston, MA 02114, USA
2. Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, MA 02115, USA

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, CAPus / SciFinder, and other databases.

Journal Rank:

JCR - Q2 (Pharmacology and Pharmacy) / CiteScore - Q1 (Medicine (miscellaneous))

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 21 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the second half of 2025).