



Extracellular matrix - an emerging research area in biosciences

Nikos K. Karamanos¹

Published online: 25 June 2022

© The Author(s), under exclusive licence to Springer Nature B.V. 2022

Extracellular Matrixes (ECMs) as dynamic 3-dimensional networks provide the structural support and integrity of cells and tissues. The macromolecules within the ECM networks regulate cell morphology and functional properties, cell signaling and gene expression affecting human pathophysiology. The complex interactions between the ECM molecules and cell surface receptors at the cell-cell and cell-matrix levels and the outside-in signaling pathways could affect development and tissue regeneration.

Advances in research related to the ECM during the last decades have demonstrated the implication of ECM macromolecules in disease development and progression. ECM components are unique in terms of their structure, composition and function, and each class of ECM macromolecule is designed to interact with other matrix effectors to produce the physical and signaling properties. ECM as a dynamic biomaterial that provides strength and elasticity, interacts with cell-surface receptors, and controls the availability of growth factors. ECM effectors could be useful potential markers for diagnostic purposes, pharmacological targeting in diseases, modern biotechnological tools for drug delivery and targeted therapies, but also in tissue remodeling and regeneration.

ECM is an emerging research area in biosciences (biochemistry, molecular and cell biology, pharmacology, medicine, bioinformatics, and bioengineering). The *Extracellular Matrix Biology*, as a comprehensive section of *Molecular Biology Reports*, will address emerging topics related to ECM in both fundamental and applied research. The section

covers the major areas and includes but is not limited to: Structure and Function of ECM components; pathobiology, diagnostics, and therapeutic approaches; molecular targeting; ECM-mediated signal transduction and stem cells; interactions and molecular dynamics; ECM networks – 3D modeling; omics and metabolism; ECM genomics and epigenetics; ECM biomaterials, scaffolds and bioengineering; and ECM-based drugs, cosmetics and food supplements.

The section *Extracellular Matrix Biology* is supported by highly qualified associate editors and editorial board members covering the wide spectrum of the above-mentioned topics.

Our intention is that with a collaborative and rigorous peer-review, the section will produce high-quality scientific articles with impact in the field.

I would like to encourage all authors to submit quality articles and thank my colleagues who have kindly agreed to join the Editorial Board of the new and exciting *Extracellular Matrix Biology* section in *Molecular Biology Reports*.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Nikos K. Karamanos
n.k.karamanos@upatras.gr

¹ Biochemistry, Biochemical Analysis & Matrix Pathobiology Res. Group, Lab. of Biochemistry, Dept. of Chemistry, University of Patras, 26110 Patras, Greece