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Collagen Remodeling and Degradation: Cellular Mechanisms and Functions

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Message from the Guest Editors

Dear Colleagues,

The ubiquitous distribution of collagen molecules throughout metazoans underpins its broad evolutionary importance in tissue and organ development. Collagen is the most abundant protein in mammals and is present as multiple types of collagen, with surprisingly broad structures and functions. These molecules play critically important roles in health and notably in fibrotic diseases, which affect many organs in very large numbers of adult patients throughout the world. In this Issue we consider the fundamental characteristics of collagen molecules and their relationships with surrounding cells, which enable matrix remodeling. We examine how the transmission of forces through fibrillar collagen arrays mediates the long-range mechanosensing that is critical for matrix homeostasis and the invasion of matrices by metastatic cancers. Finally, we consider how the near-magical properties of collagen molecules are being harnessed to enable the development of novel biomaterials that are beginning to enable organ regeneration.

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Guest Editors



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Special Issue



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