

Special Issue

Mechanobiological Research of Eyes

Message from the Guest Editors

A number of eye disorders and diseases are related to changes in the mechanical microenvironment of cells. Ocular blood flow and translaminal pressure have also been implicated in ocular diseases. The stress in the corneal stroma will redistribute after refractive surgery and the matrix will remodel due to corneal injury. Tissue remodeling and wound healing rely on cellular mechanotransduction. Therefore, using mechanobiology methods to reveal the pathogenesis of various ocular diseases will contribute to the diagnosis and treatment of ocular diseases. In this Special Issue, we will focus on the vast range of mechanobiological research of eyes. Topics include (but are not limited to):

1. The effect of mechanical stimulation on ocular cell behavior;
2. Quantifying the mechanical microenvironment in which cells and matrix function in health, disease, or injury of eyes;
3. The mechanobiologic signaling pathways or the roles of aberrant mechanotransduction pathways associated with ocular diseases;
4. Novel technologies to understand mechanobiological signaling or quantify the mechanical microenvironment, such as computational, microfabrication, imaging approaches, etc.

Guest Editors

Prof. Dr. Xiuqing Qian

School of Biomedical Engineering, Capital Medical University, Beijing, China

Prof. Dr. Haixia Zhang

School of Biomedical Engineering, Capital Medical University, Beijing, China

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

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Editor-in-Chief

Prof. Dr. Lluís Ribas de Pouplana

Institute for Research in Biomedicine (IRB Barcelona), The Barcelona
Institute of Science and Technology, 08028 Barcelona, Spain

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