Special Issue

Lab-on-a-Chip Devices and Biosensors to Model Biological Barriers

Message from the Guest Editors

The importance of integrated biochips for studying biological barriers in vitro has been increased in the last decade. Biological barriers include the skin, cornea, respiratory and gastrointestinal epithelial barriers, which are the first to come in contact with the outside environment. In the body, endothelial and epithelial cells form barriers in the testis, placenta and in the brain (blood–brain barrier, choroid plexus, blood–retina barrier). These protect the specific organ systems from outside damage and maintain ionic and nutritional homeostasis within the tissue. Integrated microelectronic biochips provide a complex hardware for multicellular barrier culture modelling, including several crucial parameters needed for effective translational studies. This Special Issue provides a platform to feature novel developments on the miniaturized microfluidic biochip device family, integrating all types of measurements. This includes barrier integrity measurements, morphology characterizations, physiology and pathology investigations, protection in diseases, novel ways of drug targeting, and gene and protein expression studies.

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Message from the Editor-in-Chief

Biosensors is a leading journal, devoted to fast publication of the latest achievements, technological developments and scientific research in the exciting multidisciplinary area of biosensors. Both experimental and theoretical papers are published, including all aspects of biosensor design, technology, proof of concept and application. Special issues are devoted to specific technologies and applications, and a selection of the most outstanding papers each year is recognized. Pushing the boundaries of the discipline, we invite original papers, as well as timely reviews on cutting edge fields within the subject area.

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