



## Multi-Modal and Molecular Imaging of Cellular Microenvironment and Tissue Development

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### Message from the Guest Editor

The physiological process within the organism involves the reciprocal interaction of tissue cells with each other, with stromal cells, and with the surrounding ECM. The three-dimensional position of cells in a tissue determines the supply of oxygen, nutrients, and soluble factors, such as cytokine and hormones. Altogether, this interplay of physical and chemical signals represents the “cellular microenvironment”. The microenvironment regulates cell proliferation, motility, migration, aggregation, and differentiation. In organism development, cues from the microenvironment are essential for the differentiation of organs. Sudden or chronic alterations of the microenvironment induce a perturbation of tissue homeostasis and can lead to a pathology. Visualizing cell dynamics in their three-dimensional tissue context is essential to understand the cellular and molecular processes in action.

The aim of this Issue is presenting the most advanced developments in multi-modal microscopy and molecular imaging of the tissue microenvironment, applied to the study of the development of organisms, tissue differentiation, and the onset and progression of pathological processes.





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