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3D Stem Cell Culture

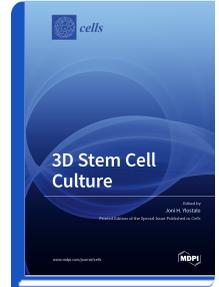
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Recently, stem cells have been drawing increasing interest in basic and translational research that aims to understand stem cell biology and generate new therapies for various disorders. Many stem cells can be cultured in 2D relatively easily using tissue culture plastic. However, many of these cultures do not represent the natural conditions of stem cells in the body. In the body, microenvironments include numerous supporting cells and molecules. Therefore, researchers and clinicians have sought ideal stem cell preparations for basic research and clinical applications, which may be attainable through 3D culture of stem cells. The 3D cultures mimic the conditions of the natural environment of stem cells better, as cells in 3D cultures exhibit many unique and desirable characteristics that could be beneficial for therapeutic interventions. 3D stem cell cultures may employ supporting structures, such as various matrices or scaffolds, in addition to stem cells, to support complex structures. This book brings together recent research on 3D cultures of various stem cells to increase the basic understanding of stem cell culture techniques and also to highlight stem cell preparations for possible novel therapeutic applications.



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