
Preface

In the beginning, the practical idea behind the transplantation of hepatocytes into livers originated from the concept to treat liver diseases in patients with an alternative approach to whole liver transplantation. By now, worldwide research in the field of hepatocyte transplantation expanded from the application of adult hepatocytes to fetal hepatocytes, to the use of extrahepatic sources such as progenitor or stem cells, to the improvement of storing and application of the cells, and finally to the entirely new possibility to use chimeric livers in animals for humanized studies *in vivo*.

The content of the book features the latest developments from the leaders in the scientific and clinical field of hepatocyte transplantation. It includes up-to-date protocols for the isolation, preservation, and validation of various cell sources comprising large and small animal models to examine the impact of cell transplantation on acute and chronic liver diseases as well as laboratory protocols for the generation of humanized livers for the assessment of biological actions *in vivo*. In addition, techniques to monitor cell engraftment after cell transplantation *in vivo* are described and procedures for computational analyses of hepatocyte transplantation are introduced for the first time.

Clinical protocols for GMP grade isolation of human hepatocytes, cryopreservation as well as for the administration of cells, including the follow-up of transplanted younger patients, provide the reader with adequate information for the clinical progress of liver cell therapy.

Comprehensive and innovative, the book *Hepatocyte Transplantation*, published in the Methods in Molecular Biology™ series format, addresses the interest of researchers and clinicians to assess the biological as well as the therapeutic potential of hepatocyte transplantation.

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*Peggy Stock
Bruno Christ*

Hepatocyte Transplantation

Methods and Protocols

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