

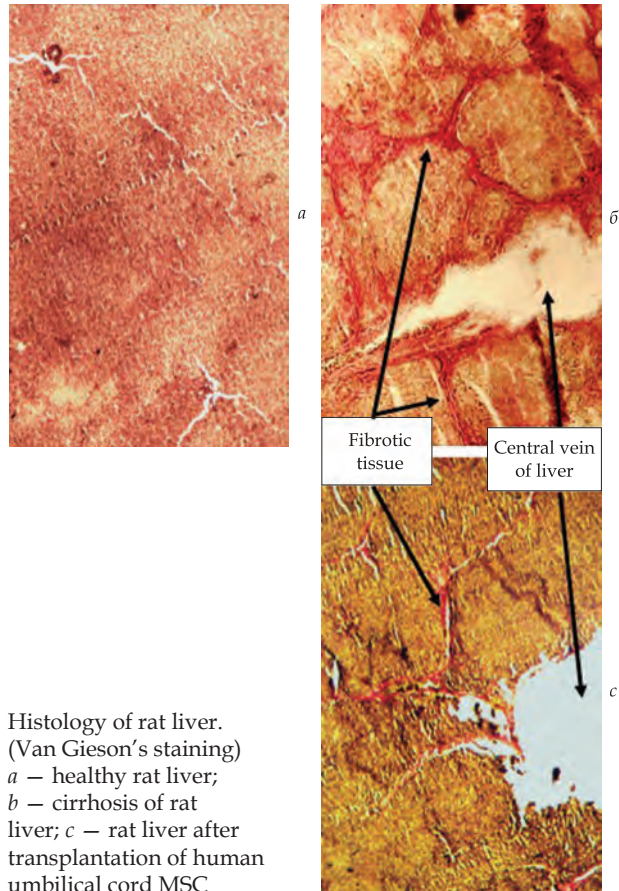
## TECHNOLOGY FOR REPAIRING THE INJURED LIVER BY TRANSPLANTATION OF HUMAN UMBILICAL CORD MSCs

### Areas of Application

The laboratory protocol for repairing the liver structure and function by transplantation of human umbilical cord mesenchymal (stromal) stem cells can be a basis for cell therapy of liver diseases in clinical trials

### Specification

The transplantation parameters include the characteristics of cell preparation (that contains human umbilical cord MSCs isolated from human umbilical cord by the explant method and multiplied by cultivation in 1–2 passages in vitro with surface markers (CD 73, CD105, CD90) expression exceeding 95%) and the transplantation method (systematic introduction of cells at a dosage of  $(5-7) \cdot 10^6$  cells/kg



Histology of rat liver. (Van Gieson's staining)  
*a* – healthy rat liver;  
*b* – cirrhosis of rat liver; *c* – rat liver after transplantation of human umbilical cord MSC

Stage of Development.  
 Suggestion for Commercialization  
 IRL3, TRL2

IPR Protection  
 IPR2

### Advantages

The cell therapy of liver cirrhosis using MSC is an alternative to liver transplantation that is currently an exclusive, but a very expensive, invasive, and not readily available treatment of liver cirrhosis. The procedure for obtaining the MSC cell preparation is relatively cheap, does not require donor selection, and can be affordable for everybody

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