中国感染控制杂志 2009, 8(4) 232-236 DOI: ISSN: 1671-9638 CN: 43-1390/R

论著

Ⅰ号冻存液改善小鼠肝细胞冻存质量研究 FREE

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摘要：

目的对自行配制组方的Ⅰ号冻存液冻存小鼠肝细胞进行研究,探索一种效果较好的冻存液以改善冻存肝细胞质量。方法以体重20～30 g的昆明小鼠为肝细胞供体，用改良的胶原酶灌注法分离肝细胞。将分离好的肝细胞分别以Ⅰ号冻存液（实验组）和标准冻存液（对照组）进行逐级降温缓慢冻存，置液氮中。于0.5、1、1.5、2个月快速复苏肝细胞，观察并测定细胞活率、功能和形态学。结果冻存小鼠肝细胞2个月后复苏检测，实验组的肝细胞活率台盼蓝（TB）染色为（80.18±2.44）%，对照组肝细胞活率TB染色为（49.71±3.51）%，两组差异有显著性（t=23.64，P＜0.05）；血清丙氨酸转氨酶（ALT）、天门冬氨酸转氨酶（AST）和乳酸脱氢酶(LDH)漏出率的值，实验组分别为（14.03±2.21）U/L、（15.14±3.03）U/L、（15.11±2.10）U/L，而对照组分别为（24.28±1.96）U/L、（25.44±2.06）U/L、（26.22±3.23）U/L，两两比较，差异均有显著性（t分别为8.84、8.58、8.32，均P＜0.05）；合成清蛋白的值，实验组为（3.24±0.18）g/L，对照组为（2.56±0.33）g/L，两组差异有显著性（t=9.25，P＜0.05）。同一组各个复苏时段，实验组与对照组的肝细胞活率，肝细胞ALT、AST、LDH的漏出率，合成清蛋白的能力之间无差别（均P＞0.05）。结论在本研究中，冻存小鼠肝细胞2个月，Ⅰ号冻存液较常规冻存液能有效减轻小鼠肝细胞的损伤，发挥良好保护作用。小鼠肝细胞在Ⅰ号冻存液的保护下，置液氮中保存2个月，不影响肝细胞活性。

关键词： 肝细胞 冻存 复苏 肝移植 细胞活性

Effect of cryoprotectant Ⅰ on the improvement of cryopreservation quality of mice hepatocytes FREE

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Abstract:

) [Abstract] ObjectiveTo study the effect of cryoprotectant Ⅰon the cryopreservation of mice hepatocytes, so as to explore a cryoprotectant with better effect for improving the cryopreservation quality of hepatocytes. MethodsKunming mice weighting 20～30g were as donors, an improved collagenase perfusion technique was established to isolate the mice hepatocytes. The isolated mice hepatocyte were cryopreserved respectively with cryoprotectant Ⅰ(trial group) and the standard cryoprotectant (control group) in nitrogen liquid. Cryopreserved mice hepatocytes were thawed at 0.5 month,1 month, 1.5 months, 2 months respectively. The viability, function and morphology of hepatocytes were observed. ResultsAfter 2 months cryopreservation, the viability of thawed hepatocytes in trial group were (80.18±2.44)% with trypan blue staining, while the control group were (49.71±3.51)%, there was significant difference between two groups (t=23.64, P＜0.05）; the leakage rate of alanine aminotransferase (ALT), aspartate aminotransferase (AST), lactate dehydrogenase (LDH) of trial group were(14.03±2.21)U/L, (15.14±3.03)U/L, and (15.11±2.10)U/L respectively, and the control group were (24.28±1.96)U/L, (25.44±2.06)U/L and (26.22±3.23)U/L respectively, there were significant differences between two groups respectively (t=8.84, 8.58,8.32; all P＜0.05）; the synthesis of albumin (ALB) of the trial group and control group were (3.24±0.18)g/L and (2.56±0.33)g/L respectively, there was significant differences between two groups (t=9.25, P<0.05).There were no obvious differences in the same group of its viability, the leakage rates of ALT, AST and LDH and synthesis of ALB at each stage of thawing (all P＞0.05). ConclusionIn this research, compared with standard cryoprotectant, the cryoprotectant Ⅰcan effectively protect the mice hepatocytes from cryopreserved injury, mice hepatocytes can be cryopreserved in nitrogen liquid for two months with no changes in viability.

Keywords: hepatocyte; cryopreservation resuscitation hepatocyte transplantation cell viability

收稿日期 2008-10-09 修回日期 2008-12-23 网络版发布日期 2009-07-30

DOI:

基金项目:

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