

畜牧兽医科学

不同冻存液对奶牛乳腺上皮细胞冻存质量的影响

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摘要: 本试验旨在探究奶牛乳腺上皮细胞 (bovine mammary epithelial cells,BMECs) 最佳的冻存液以改善乳腺上皮细胞的冻存质量。BMECs传至第5代后分别加入以下10种不同配方的冻存液。A组: 85%DMEM+10%胎牛血清+5%DMSO; B组: 80%DMEM+10%胎牛血清+10%DMSO; C组: 75%DMEM+10%胎牛血清+15%DMSO; D组: 70%DMEM+10%胎牛血清+20%DMSO; E组: 85%DMEM+5%胎牛血清+10%DMSO; F组: 75%DMEM+15%胎牛血清+10%DMSO; G组: 70%DMEM+20%胎牛血清+10%DMSO; H组: 80%DMEM+10%胎牛血清+10%甘油; I组: 70%DMEM+10%胎牛血清+20%甘油; J组: 60%DMEM+10%胎牛血清+30%甘油, 冻存前统一调整细胞密度到1×10⁶ /mL冻存。分别对复苏后的细胞进行台盼蓝染色计算存活率和PI/Hoechst33258双染计算凋亡率。结果表明: BMECs经不同冻存剂冻存复苏后, 细胞活力、形态学及凋亡率表现有所不同, 其中B组和G组的活力和24 h贴壁率较其他组高, 二者的凋亡率较低, 二者之间差异无显著性(P>0.05); 传代后B组细胞的生长状况最好。

关键词: 奶牛 乳腺上皮细胞 冻存液

Effect of Different Cryoprotectants on the Cryopreservation Quality of Bovine Mammary Epithelial Cells

Abstract: This paper was aimed to search an optimal cryoprotectant for improving the cryopreservation quality of bovine mammary epithelial cells. The following 10 kinds of different ingredients of cryoprotectant were added to the fifth generation of BMECs respectively, group A: 85% DMEM +10% FBS +5% DMSO; group B: 80% DMEM +10% FBS +10% DMSO; group C: 75% DMEM +10% FBS +15% DMSO; group D: 70% DMEM +10% FBS +20% DMSO; group E: 85% DMEM +5% FBS +10% DMSO; group F: 75% DMEM +15% FBS +10% DMSO; group G: 70% DMEM +20% FBS +10% DMSO; group H: 80% DMEM +10% FBS +10% glycerol; group I: 70% DMEM +10% FBS +20% glycerol; group J: 60% DMEM +10% FBS +30% glycerol, adjust the cell density to 1 × 10⁶ /mL before cryopreservation.After the cell recovery , the survival and apoptosis rate of cells were calculated by trypan blue staining and PI/Hoechst33258 double staining respectively . Results indicated that the BMECs in these groups showed different levels of viability, morphology, and apoptosis after recovery. The vitality and 24 h adhering rate of group B and G was higher than that in other groups.Furthermore , the apoptosis rate of them were lower and there were no significant difference between them(P >0.05).After passage, the cells of group B grew the best.

Keywords: Bovine Mammary epithelial cells Cryoprotectants

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