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回心草对心肌细胞缺氧损伤的保护作用

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中文摘要：目的：研究回心草水提液对心肌细胞缺氧损伤的保护作用,并从氧化应激角度探讨其作用机制。 方法：原代培养乳鼠心肌细胞,以3×10^5~5×10^5/mL密度接种于96孔板后第4天用无血清DMEM/F12培养48 h,然后置于缺氧环境(37 ℃,94%N_2,1%O_2,5%CO_2)中继续孵育24 h,建立体外心肌细胞缺氧损伤模型,并采用噻唑蓝(MTT)法测定1,2,3,4,5 g·L^{-1}回心草水提液干预24 h后细胞的活力;利用全自动生化分析仪测定细胞上清液中乳酸脱氢酶(LDH)、肌酸激酶(CK)、超氧化物歧化酶(SOD)、丙二醛(MDA)的含量。结果：回心草水提液可提高缺氧损伤心肌细胞的活力,其中3,4 g·L^{-1}组的吸光度(*A*)分别为(0.529±0.031),(0.534±0.024),与缺氧损伤组*A* 值(0.498±0.012)比较差异显著(*P*<0.05,*P*<0.01);能降低LDH,CK活性和 MDA含量,提高SOD活性,其中以回心草水提液3 g·L^{-1}组效果最佳。 结论：回心草水提液能够保护缺氧损伤的心肌细胞,可能与其改善氧化应激有关。

中文关键词：回心草　心肌细胞　噻唑蓝　氧化应激

The Protective Effect of *Rhodobryum giganteum* on Cardiocytes Injured by Hypoxia

Abstract: Objective: To study the effect of *Rhodobryum giganteum* water extract on cardiocytes injured by hypoxia and explore its mechanism from the perspective of oxidative stress. Method: The injured cardiocyte model induced by hypoxia was established as follows: 3×10^5-5×10^5/mL primary cultured neonatal rat cardiomyocytes seeded in 96-well plates were cultured for 48 h in serum-free DMEM/F12, and then placed in hypoxia (37 ℃, 94%N_2, 1%O_2, 5%CO_2) to incubate for another 24 h. 1,2,3,4,5 g·L^{-1} water extract of *R. giganteum* was added to cultivated injuried cardiocytes, and after 24 h, the activity of the cells was carefully determined by *A* value with MTT method. Activity of super oxide dismutase (SOD), malonaldehyde (MDA), lactate dehydrogenase (LDH) and creatine kinase (CK) in medium was assayed by automatic biochemistry analyzer. Result: The *A* values indicated that 3, 4 g·L^{-1} *R. giganteum* water extract groups increased activity of the cells significantly compared with the model group (0.498±0.012) (*P*<0.05, *P*<0.01). And it could reduce LDH, CK activity and MDA levels and increase SOD activity in medium, and 3 g·L^{-1} group was much better than other dose groups. Conclusion: Water extract of *R.giganteum* has protective effect on cardiocytes injured by hypoxia, the mechanism may be related to inhibiting oxidative stress.

keywords:*Rhodobryum giganteum*　cardiomyocyte　MTT　oxidative stress

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