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Acquisition and identification of a new tumor marker—— cholangiocarcinoma-related antigen

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Abstract A new tumor marker, cholangiocarcinoma-related antigen (CCRA), a protein with a antigenic purifying degree of 105.72 fold and an antigenic activity of 980.00μg/mg, was isolated from the tissue of human cholangiocarcinoma and purified in the following procedure: (1) The tumor tissue was firstly mixed with ammonium sulfate in 20% ~ 45% saturation. (2) The dialyzed solution was concentrated and applied to two columns of DEAE-sephacel 52 of 1.2 cm× 20 cm and 1.5 cm× 30 cm in size and two columns of Sepharose 6B both of 1.5 cm× 70 cm in size respectively. It was identified that the purified CCRA was a new tumor-related antigen which was different from carcinombryonic antigen (CEA), α-fetoprotein (AFP) and β_2-microglobin (β_2-MG) and had a molecular weight of 114 kD. Electrophoresis of serum protein revealed that it was located between the α_2 and β lines. Treatment of CCRA with trypsin and pepsin resulted in loss of its immune activity, which indicates that CCRA is sensitive to and easily destroyed by the two enzymes. Immunohistochemical examination revealed that CCRA mainly existed in the tissue of cholangiocarcinoma.

Key words cholangiocarcinoma; cholangiocarcinoma-related antigen; tumor marker

巯基供体对低温缺血-再灌注心脏保护作用的研究

A study of protective effects of thiol donors on hypothermic ischemia-reperfused heart

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心脏手术中心肌保护不完善是导致低心输出量综合征的重要原因,可造成病人住院时间延长甚至死亡,也可能引起远期心肌纤维化,影响心脏功能。谷胱甘肽及其相关氧化-还原循环在维持细胞还原状态,抗自由基氧化损伤中具有重要意义。使用巯基供体可改善谷胱甘肽贮存和心肌还原巯基库含量,增强心肌抗自由基损伤能力。

本实验采用离体心脏灌注模型,研究附加巯基供体谷胱甘肽(G组)、N-乙酰-L半胱氨酸(N组)或 S-8744(S组) 2 mmol/L的 St. Thomas液对低温缺血-再灌注心脏的保护作用,并采用^{31}P-NMR技术就巯基供体对低温缺血-再灌注心脏高能磷酸化合物代谢的影响进行研究。对线粒体呼吸功能、线粒体肌酸激酶和心肌肌原纤维肌酸激酶、ATP酶活性进行测定。探讨巯基供体对心肌代谢的作用环节。主要结果如下:

(1)应用双心室顺灌做功模型,观察 4℃保存豚鼠心脏 240 min,再灌注 60 min心功能恢复情况,结果表明,附加巯基供体显著改善心脏左、右室功能的恢复。

(2)应用 Langendorff-Neeley顺灌做功模型,观察附加巯基供体对 20℃低温停搏 180 min,再灌注 60 min大鼠心脏功能的影响。结果表明附加巯基供体可显著改善 St. Thomas液的心肌保护作用。并能改善心肌磷酸腺苷代谢,超微结构观察损伤较轻。

(3)在 NMR条件下的 Langendorff心脏模型上,应用^{31}P-NMR技术动态观察心肌高能磷酸化合物代谢,结果表明,附加巯基供体明显改善再灌中 PCr、ATP、Pi的恢复。

(4)线粒体氧化磷酸化功能在低温缺血-再灌注中明显受抑制,附加巯基供体可明显减轻线粒体功能障碍。机理可能与提高线粒体内还原巯基库含量,增强抗自由基氧化损伤能力有关。

(5)附加巯基供体还对低温缺血-再灌注中心肌线粒体肌酸激酶活性和肌原纤维 ATP酶活性有一定保护作用,改善心肌 ATP传输和利用。

总之,本文所研究的 GSH, NAC, S-8744可能是低温心脏麻痹液有价值的添加药物,对于改善低温下心肌保护有显著作用。

关键词 巯基供体,谷胱甘肽,N-乙酰-L-半胱氨酸;心肌保护;线粒体;心肌/代谢;核磁共振(NMR)

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