论著

利用SELDI-TOF质谱技术分析大肠癌患者血清蛋白质谱的变化

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摘要　　目的：研究大肠癌血清蛋白质谱的变化，从而筛选特异性蛋白标志物。 方法： 利用IMAC3蛋白质芯片和SELDI-TOF质谱技术，对64例大肠癌病人和40名正常人的血清蛋白质谱进行分析。获得的蛋白质谱采用Ciphergen公司的Biomarker Wizard和Biomarker Pattern软件分析。 结果： 通过对大肠癌术前血清与正常人血清蛋白质谱分析发现共有19个蛋白质表达量有明显差异。并获得分子量为5 972.67 D、5 927.21 D、6 113.48 D、5 908.55 D和4 292.51 D这5个蛋白质组成的模板，可将大肠癌与正常人正确分组，其正确分组率分别为97.5％（56/64）和80％（32/40）。术后血清蛋白质谱中，原高表达的蛋白质明显下调。 结论： 结果表明通过大肠癌手术前后及正常对照血清中蛋白质谱的比较，筛选得到用以诊断大肠癌的特异性蛋白标志物并用以预后的判断。SELDI-TOF蛋白质芯片技术为建立蛋白质模板从而早期诊断大肠癌提供了可靠的技术平台。

关键词　结直肠肿瘤； 质谱法,SELDI-TOF； 生物学标记

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Analysis of proteomic spectra in serum from patients with colorectal cancer by SELDI-TOF mass spectrometry

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Abstract

<FONT face=Verdana>AIM: To study the changes of proteomic spectra in serum from patients with colorectal cancer in order to detect the specific protein markers. METHODS: Proteomic spectra of sixty-four serum samples from patients with colorectal cancer (preoperation and postoperation) and forty from normal individuals were generated by IMAC-Cu proteinchip array and SELDI-TOF mass spectroscopy (surface enhanced laser desorption/ionization-time of flight). The discriminatory profiling between cancer and normal samples was analyzed by Biomarker Wizard software and Biomarker Pattern softwar. RESULTS: Nineteen differentially expressed proteins in serum were screened by analysis of protemic spectra of preoperative patients and normal individuals. Five proteins (5972.67 D, 5927.21 D, 6113.48 D, 5908.55 D and 4292.51 D) were obtained for making up marker patterns that was able to class the patients-team and normal-team. Corresponding correct ratio were 97.5% (56/64) and 80% (32/40). The proteins that overexprssed in preoperation were obviously down-regulated when postoperation. CONCLUSION: The preliminary results suggest that classification system will provide a highly accurate and innovative approach for the early diagnosis of colorectal cancer and judgment of prognosis. SELDI-TOF mass spectrometry is a useful tool for the detection and identification of new protein markers in serum. </FONT>

Key words　Colorectal neoplasms　Mass spectrometry　SELDI-TOF　Biological markers

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