

研究论文

质谱法分析2型糖尿病大鼠神经视网膜差异表达蛋白

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摘要 采用二维电泳(2DE)分离了正常SD大鼠和2型糖尿病模型大鼠神经视网膜组织总蛋白, 并用Image Master 5.0软件分析比较了正常组和糖尿病组2DE图像, 正常组检测到 $3122 \pm 37 (n=3)$ 个蛋白质点; 糖尿病组检测到 $2702 \pm 21 (n=3)$ 个蛋白质点. 约150个蛋白质点的表达水平在两组之间存在明显差异($P < 0.05$). 在糖尿病组中表达上调的点68个, 下调的点82个. 选择20个差异表达蛋白质点进行肽质量指纹谱(PMF)或串联质谱鉴定, 其中7个蛋白已有报道与糖尿病视网膜病变(DR)相关, 10个蛋白尚未见有报道.

关键词 [糖尿病视网膜病变](#) [神经视网膜](#) [蛋白质组学](#) [二维凝胶电泳](#)

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Determination of Different Protein Expression in Neural Retina of Diabetic Rats by Mass Spectrometry

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Abstract High-resolution two-dimensional polyacrylamide gel electrophoresis(2DE) was used to separate total proteins extracted from neural retinas of diabetic and age-matched control rats and followed by computer assisted image analysis to quantitatively compare the differences in protein expression between diabetic and age-matched control rats. Totally $3122 \pm 37 (n=3)$ spots were detected in normal samples and $2702 \pm 21 (n=3)$ spots were detected in the samples of diabetic rats. The expression levels of *ca.* 150 protein spots was different between the control group and diabetic retinas($P < 0.05$). Compared with the control group, the expression level of 68 protein spots was up-regulated($P < 0.05$) and 82 protein spots was down-regulated($P < 0.05$) in diabetic rats, and 20 different expressed proteins were identified by peptide mass fingerprinting(PMF) or peptide sequence. Seven of the identified proteins were proved to be relevant in predicting pathology of diabetic retinopathy(DR) by previous study and ten proteins are newly discovered proteins associated with DR. The results provide a basis for further research on the diabetic retinopathy.

Key words [Diabetic retinopathy](#) [Neural retinas](#) [Proteome](#) [Two-dimensional gel electrophoresis](#)

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