

研究论文

快速老化模型小鼠血清蛋白质组学分析比较

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摘要 以6月及12月龄SAMP 8及同龄SAMR 1为研究对象, 应用双向凝胶电泳法, 分析比较了快速老化模型小鼠(Senescence accelerated mice, SAM)的快速老化亚系SAMP 8及抗快速老化亚系SAMR 1血清蛋白表达的差异. 与同龄SAMR 1比较, 6月龄SAMP 8血清中有15个蛋白点表达显著上调, 3个蛋白点表达显著下调, 7个蛋白点只在SAMP 8中有表达; 12月龄SAMP 8血清中有9个蛋白点表达显著上调, 7个蛋白点表达显著下调, 12个蛋白点只在SAMP 8中有表达. 应用质谱进行肽质量指纹图谱分析和数据库检索共鉴定了19种蛋白质. 其中6个蛋白只在6月龄SAMP 8中表达, 4个蛋白只在12月龄SAMP 8中表达. 此外, 在6月龄及12月龄SAMP 8血清差异蛋白中, 存在9个共同的差异蛋白, 按照功能可分为4类: (1) 免疫相关蛋白; (2) 老化相关蛋白; (3) 糖代谢及神经元凋亡相关蛋白; (4) 其它蛋白. 上述研究结果显示, SAMP 8和SAMR 1血清蛋白表达存在明显差异, 其中一些差异蛋白可能是SAMP 8老化进程中相关病理生理变化的重要原因.

关键词 [快速老化模型小鼠](#) [血清蛋白质组](#) [双向凝胶电泳](#)

分类号 [Q51](#)

Analysis and Comparison of Serum Proteomics of Senescence Accelerated Mice

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Abstract To analyze and compare differential serum proteins of senescence accelerated mice: SAMP-prone/8(SAMP 8) and SAM-resistance/1(SAMR 1), the proteins of sera from 6 and 12 month-old SAMP 8 and age-matched SAMR 1 were separated, detected and analyzed. Compared with the same age SAMR 1, 15 proteins expressions in sera of six-month-old SAMP 8 were up-regulated, 3 proteins expressions down-regulated significantly and 7 proteins only expressed in SAMP 8 sera; 9 proteins expressions in sera of twelve-month-old SAMP 8 were up-regulated, 7 proteins expressions down-regulated significantly and 12 proteins only expressed in SAMP 8 sera. Using MALDI-TOF-MS, 19 proteins with significant changes were identified by peptide fingerprinting-map and the results searched in MASCOT database. The results showed that 6 proteins were only expressed in sera of six-month-old SAMP 8, 4 proteins only expressed in sera of twelve-month-old SAMP 8. In addition, there were 9 common proteins presenting both in sera of six and twelve-month-old SAMP 8. Our study showed that there were significant differences in serum protein expressions between SAMP 8 and SAMR 1, and some differential proteins may result in pathological changes during the course of aging.

Key words [Accelerated senescence mouse](#) [Serum proteomics](#) [Two dimensional gel electrophoresis](#)

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