

徐清泉, 邓玉强. 大豆多肽对过度训练大鼠肾脏滤过屏障形态结构和尿液成分的影响及其机制[J]. 中国康复医学杂志, 2008, (11): 979-982

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基金项目: 江苏省教育厅自然科学基金资助项目 (E0109188)

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摘要:

目的: 探讨补充大豆多肽对过度训练大鼠肾脏滤过屏障形态结构和功能的影响及其可能的机制。方法: 将30只雄性大鼠随机平均分为3组, 分别为对照组(C)、过度训练组(OT)、过度训练+补充大豆多肽组(OS)。检测各组大鼠肾组织SOD活性和MDA含量以及尿液总蛋白、白蛋白和β-微球蛋白含量, 并观察各大鼠肾脏滤过屏障形态结构的变化。结果: 电镜下, OT组大鼠肾组织出现毛细血管球系膜增生, 基膜基质增多, 足细胞肿胀、融合, 裂孔不清晰等变化; OS组肾小球基底膜厚度均匀, 轻微增厚; 足细胞排列有序, 有足细胞足突有轻度融合现象, 裂孔变小。与C组相比, OT组大鼠血清睾酮水平显著降低 ($P<0.01$), 皮质醇水平显著增高 ($P<0.01$), 尿液中的TP、Alb、β2-MG含量显著增高 ($P<0.01$), 肾组织SOD活性显著下降 ($P<0.01$), MDA水平显著升高 ($P<0.01$); 与OT组相比, OS组SOD活性显著升高 ($P<0.01$), MDA水平显著下降 ($P<0.01$), 尿液TP、Alb、β2-MG含量显著降低 ($P<0.01$)。结论: 大豆多肽可能是通过提高肾脏的抗氧化能力和加快自由基的清除的机制, 实现了对过度训练大鼠肾脏滤过屏障形态结构完整性的维持。

关键词: [谷氨酰胺](#) [大豆多肽](#) [过度训练](#) [肾脏滤过屏障](#) [形态](#) [尿液成分](#)

Research on the effects and mechnism of soybean peptide supplementation on the over-training rats' kidney filtration barrier structure and component of urine [Download Fulltext](#)

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Fund Project:

Abstract:

Objective: To investigate the effects and mechnism of glutamine and soybean peptide supplementation on the structure of kidney filtration barrier and component of urine in over-training rats. Method: Thirty male rats were randomly divided into three groups, namely the control group (C), over-training group (OT), and over-training + Soybean peptides group(OS). The activity of SOD and levels of MDA in the kidney, and the content of TP, Alb,β2-MG and observe the changes of filtration barrier in every group were examined. Result: Under electronic microscope, the OT group appeared glomerulus mesangium hyperplasia, glomerular basement membrane increased, podocyte swelled, inosculate, and the slit pore was not clearly. The thickness of glomerular basement membrane was symmetrical, the array of podocyte kept orderly, the foot process appeared light fusion occasionally and the slit pores got smaller in OS group. Compared with C, OT rats' serum testosterone levels and SOD activity decreased significantly, and the corticosterone levels and SOD were significantly increased at the same time. The urine contents of TP, Alb, β2-MG increased markedly. Compared with OT group, urinary contents the content of MDA, and TP, Alb, β2-MG of OS group decreased significantly, while the activity of SOD increased abviously in OS group. Conclusion: The supplement of glutamine had obvios effects on maintaining the structure of kidney filtration barrier by increasing the activity of SOD and descreasing the level of MDA in the kindy.

Keywords: [soybean peptides](#) [over-training](#) [kidney filtration barrier structure](#) [urinary component](#)

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