论著

枸杞多肽对D-半乳糖诱导小鼠的抗衰老作用及其可能机制

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摘要   目的 研究枸杞多肽对D-半乳糖（D-gal）衰老模型小鼠的影响及其可能作用机制。方法 ICR小鼠60只，随机分为正常对照组、衰老模型组、 枸杞多肽200，400， 800 mg/（kg· d）剂量组和100 mg/（kg· d）维生素E（VitE）组。除正常组外均采用D-gal 10 mg/kg颈背部皮下注射，每日1次，连续注射5周，同时枸杞多肽和VitE组按20 ml/（kg· d）灌胃给药。观察各组小鼠的行为学及学习记忆改变，并于5周后检测小鼠血清、心脏、肝脏、脑组织中超氧化物歧化酶（SOD）活性、丙二醛（MDA）含量及端粒酶活性。结果 与正常对照组相比，衰老模型组小鼠体重增加明显减少，小鼠跳台错误次数明显增多，小鼠血清、心脏、肝脏和脑SOD和端粒酶活性降低，MDA含量增加（P<0.01）。与模型组相比，枸杞多肽组和VitE组小鼠体重增加升高（P<0.01），小鼠跳台错误次数减少（P<0.05），小鼠血清、心脏、肝脏和脑组织SOD活性升高，MDA含量减少（P<0.05）；枸杞多肽200 mg/（kg· d)剂量组及VitE组小鼠血清端粒酶活性有升高的趋势，但差异不显著；400和800 mg/（kg· d)剂量组小鼠血清和心脏端粒酶活性升高（P<0.01），VitE组小鼠心脏端粒酶活性也明显升高；而各治疗组小鼠肝脏和脑组织端粒酶活性无明显变化。结论 枸杞多肽对D-gal诱导衰老模型小鼠有抗衰老作用，其机制可能与提高小鼠血清、心脏、肝脏和脑组织SOD活性，减少MDA含量，以及提高血清和心脏端粒酶活性有关。

关键词   枸杞多肽   D-半乳糖   衰老模型,小鼠   体重   超氧化物歧化酶   丙二醛   端粒酶

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Anti-aging effect of polypeptides from Fructus Lycii on D-gal induced aging model mice and the possible mechanism

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Abstract

Objective To study the anti-aging effect of polypeptides from Fructus Lycii（PFL）on D-galactose（D-gal）induced aging model mice and the possible mechanism. **Methods** Sixty ICR mice were randomly divided into normal control group, D-gal induced model group, PFL 200, 400 and 800 mg/(kg·d) groups and vitamin E(VitE)100 mg/(kg·d) group. D-gal aging mouse model was established by cervicodorsal region subcutaneous injection with D-gal(10 mg/kg) once a day for five successive weeks. In the meantime, drugs were given by intragastric administration respectively in PFL and Vit E treatment groups. The effect of PFL on learning and memory ability of mice was observed. After 5 weeks, the superoxide dismutase (SOD) activity, malondialdehyde(MDA) content and telomerase activity in serum, heart, liver and brain tissues of mice were measured. **Results** Compared with normal control group, for aging model mice, the weight increasement declined, the number of errors in step-down test increased, the SOD and tolemerase activities in serum heart, liver and brain tissues dropped, and the MDA content was raised, P<0.01. Compared with model group, for the mice in PFL and VitE treatment groups, the weight increasement rised(P<0.01), the error number in step-down test decreased(P<0.05), the SOD activity in serum, heart, liver and brain tissues enhanced, and the MDA content reduced(P<0.01). The telomerase activity in serum and heart of 400, 800 mg/(kg·d) PFL and VitE treatment groups also increased significantly than model group, while that in liver and brain did not change. **Conclusion** PFL have anti-aging effect on D-gal induced aging mice, and the action mechanism is related to the increasement of SOD activity, the decreasement of MDA content in serum, heart, liver and brain of D-gal aging mice, and the increasement of telomerase activity in serum and heart.

Key words   polypeptides from Fructus Lycii（PFL）   D-galactose   aging model mice   weight   superoxide dismutase   malondialdehyde   telomerase

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