

莲子的抗衰老实验研究

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摘要 利用脏体比、T淋巴细胞数,超氧化歧化酶(SOD),过氧化脂质(LPO)、谷胱甘肽过氧化物酶(GSH-Px)测定喂养含不同浓度莲子粉饲料的Wistar大鼠1个月后各项指标,结果发现:胸腺皮质中T淋巴细胞数实验组显著高于对照组,脏体比、SOD、LPO、GSH-Px未发现实验组与对照组之间有明显不同,提示莲子粉有一定增强免疫力的作用。

关键词 抗衰老 莲子 大鼠

莲子*Nelumbo nucifera*为晚莲科植物莲的种子。味甘、涩、平,归心、脾、肾经,具有养心益肾,健脾止泻之功效。治夜寐多梦,遗精,久痢,虚泻等,但对莲子单味药的研究不多,尤其对延缓衰老的研究更少^[1],为此,本文对莲子的抗衰老作用进行了初步研究。

1 材料和方法

1.1 动物:由中国军事医学科学院动物中心提供Wistar大鼠40只,雌雄各半,体重182~232g。

1.2 样品:将湖北产莲子粉碎成粉末状。

1.3 剂量:以50kg成人每日食用莲子约15g为参考,200g大鼠每天食用60mg莲子,以每只大鼠每天摄取20g饲料计算,每千克饲料应加莲子粉3g,(1,2,3)剂量组分别添加3g莲子粉的2倍,40倍,100倍,分别为6g/kg饲料,120g/kg饲料,300g/kg饲料。对照组食用普通饲料,动物自由进食一个月。

1.4 测定方法:动物断头处死,分别测定脏体比、T淋巴细胞、红细胞SOD测定^[2]、血清LPO测定^[3],全血GSH-Px测定^[4]。

2 结果

2.1 莲子对Wistar大鼠脏体比影响:结果见表1。胸腺/体重、脾/体重实验组与对照组比较无显著性差异($P>0.05$)。

2.2 莲子对Wistar大鼠T淋巴细胞的影响:结果见表2。脾脏T淋巴细胞数实验1,2组与实验3组,对照组比较有显著性差异($P>0.05$),实验组3与对照组比较无显著性差异($P>0.05$),胸腺皮质T淋巴细胞实验组均高于对照组且实验组2,3与对照组比较有显著性差异($P<0.05$)。胸腺髓质实验组与对照组比较无显著性差异($P>0.05$)。

2.3 莲子对Wistar大鼠对红细胞SOD、血清LPO、全血GSH-Px的影响:结果见表3, SOD、LPD、GSH-Px实验组与对照组比较均无显著性差异($P>0.05$)。

3 讨论

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表1 Wistar大鼠脏体比测定值($\bar{x} \pm S$)

组别(动物数)	胸腺g/100g体重	脾g/100g体重
实验1组(10)	0.119±0.040	0.180±0.025
实验2组(10)	0.117±0.049	0.190±0.034
实验3组(10)	0.118±0.036	0.183±0.033
对照组(10)	0.114±0.058	0.213±0.052

表2 Wistar大鼠T淋巴细胞测定值 ($\bar{x} \pm S$)

组别(动物数)	脾(T细胞数/100个细胞)	胸腺皮质	胸腺髓质
实验1组(10)	81,76 ± 9,792	25,717 ± 10,538	46,764 ± 17,366
实验2组(10)	77,461 ± 11,824	27,099 ± 9,128	46,117 ± 10,718
实验3组(10)	90,648 ± 3,557	28,243 ± 5,066	53,327 ± 7,131
对照组(10)	90,964 ± 2,52	22,178 ± 5,492	49,680 ± 14,453

表3 Wistar大鼠SOD、LPO、GSH-Px测定值 ($\bar{x} \pm S$)

组别(动物数)	SOD (u/gHb)	LPO (um/ml)	GSH-Px (u)
实验1组(10)	8172.18 ± 681.00	2.04 ± 1.20	28.38 ± 4.41
实验2组(10)	8048.21 ± 692.65	1.24 ± 0.53	27.05 ± 6.63
实验3组(10)	8631.33 ± 939.38	1.48 ± 0.98	25.00 ± 4.88
对照组(10)	8276.35 ± 961.54	1.31 ± 0.94	30.05 ± 6.91

人和动物衰老时可发生胸腺退化, T淋巴细胞偏低。实验表明实验2,3组胸腺皮质T淋巴细胞数显著高于对照组 ($P < 0.05$), 提示莲子有增强免疫功能的作用。而脏体比、脾和胸腺髓质T淋巴细胞数实验组与对照组比较未发现有明显变化 ($P > 0.05$), 这是否与观察时间较短有关, 需要进一步探讨。Harman认为自由基积累的毒害作用可能是衰老的根本原因, 过氧化脂质的生成引起细胞结构和功能的损伤, SOD、GSH-Px可消除自由基对细胞的毒害作用。本实验未发现莲子对SOD、LPO、GSH-Px有明显影响 ($P > 0.05$), 这是否与实验时间较短有关也需进一步探讨。由于衰老是一个十分复杂的过程, 衰老的自由基学说不能完全解释衰老的各种现象, 有必要对衰老进行多方面的研究。

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番木瓜种子水提物对雄性大鼠的抗生育作用

Lohiya N K, et al. *Planta Medica* 1995, 60(5): 400

作者以成熟的番木瓜种子的水提物分两种给药途径(口服和肌注)给雄性大鼠, 每种途径分高剂量(口服: 50mg/只·d; 肌注: 1.0mg/只·d、低剂量(口服: 10mg/只·d, 肌注0.1mg/只·d)两组, 口服分30、60和90d, 肌注分15和30d, 对照组给以蒸馏水, 观察其抗生育作用, 结果表明: a) 所有治疗组大鼠的副睾尾精子活力和数量显著降低, 并伴有精子形态学的缺损, b) 所有治疗组(除低剂量肌注组外)的睾丸精子数也是减少。c) 其抗生育作用是剂量依赖关系和用药持续

时间的依赖关系。高剂量组口服60d或肌注30d的大鼠生育能力为零。d) 所有治疗组的睾丸重量减小, 其它性器官也有不同影响。e) 体重和毒理学未见异常。停药(口服45d, 肌注30d)后, 生育能力及所有变化均恢复正常。上述研究结论为: 雄性大鼠长期给以番木瓜种子水提物, 无论是口服或肌注, 都能引起大鼠可逆的不育作用, 而对性欲及毒理学方面无不良反应。

陈蕙芳摘译

Experimental Study on the Antiaging Effect of Powdered Hindu Lotus (*Nelumbo nucifera*) Seed

Ma Zhongjie, Wang Huiqin, Liu Lijuan, et al

Antiaging effects of powdered *Nelumbo nucifera* seed were studied on wistar rats by comparing their viscera/body, T lymphocyte, SOD, LPO, GSH-Px between fed animals and control. Results showed that there was obvious increase of T lymphocyte in thorax cortex between fed and control, whereas distinct disparity of other indexes can not be found. These results implied that powdered *N. nucifera* seed has some functions of enforcing immunity.

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Characteristic Performance of F₁ Hybrid of Jobstears (*Coix lacryma-jobi*) and *C. lacryma-jobi* var. *friumentacea* and Inheritance of Stigma Colour

Qiao Yake, Li Guilan, Gao Shuguo, et al

The main characters and peroxidase isozymes of *Coix lacryma-jobi* L. and *C. lacryma-jobi* var. *friumentacea* Makino and their F₁ hybrid were analyzed. Results showed that the plant height, area of leaves per plant, growth performance, and photosynthetic characteristic of F₁ hybrid all exceeded its parents. Bands of iso-peroxidase were different between F₁ hybrid and its parents. There were more bands of isoperoxidase in the *C. lacryma-jobi* var. *friumentacea* Makino than in *C. lacryma-jobi* L.. This is the first report to show the inheritance regularity of stigma colour which was controlled by two complementation genes.

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Approaching the Stock Investigation Method of Medicinal Plants

Jin Changdong, Liu Siyi, Yang Wanxi, et al

Combined with practical experience, a stock investigation method of medicinal plants is approached from different angles, such as setting up the sample field and quadrant, doing the fieldwork, calculating the stock and annual possible gathering volume, etc. Depending on the geographical distribution features of the plants, the sample field are pointed out on topographic maps (1:50 000 or 1:10 000). Quadrants are set up at random or regularly according to the species and density of the plants. The location, area, slop orientation, gradient, elevation, and vegetation of the sample field, also the area of quadrant and the amount of plants investigated, should be carefully noted down during the fieldwork. The quadrants are classified according to their slop orientation and gradient, then convert the recorded amount of plants in quadrants to the amount of plants per square kilometre. The stock of per square kilometre is equal to the volume of the amount of the plants in per square kilometre divided by the amount of the plants per kilogram. The stock of per square kilometre multiplied by the area of earth's surface is the stock volume, which should be classified by the slop orientation and gradient. The sum of the volumes is the total stock of a kind of plant. As to gather and make use of the medicinal plants in a gathering circle period, the annual possible gathering volume should be calculated as the stock volume of the plant divided by the gathering circle period.

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