

 中文标题 检索 跨刊检索

川芎提取物对线虫寿命的影响及分子机制研究

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中文摘要:目的: 观察川芎提取物(CXE)对秀丽隐杆线虫寿命的影响并探讨其分子机制。方法: 寿命实验设对照组和CXE 4个用药组(12.5, 25, 50, 100 mg · L⁻¹), 观察CXE对线虫平均寿命、最大寿命的影响, 选用延寿效果最佳浓度的CXE(25 mg · L⁻¹)培养线虫10 d后, 采用实时荧光定量PCR(qRT-PCR)方法检测分析对照组和用药组衰老相关基因的表达变化。结果: 与对照组相比, 25, 50, 100 mg · L⁻¹ CXE均能显著延长线虫的平均寿命(分别为15.7%, 9.1%, 6.2%, P < 0.01)和最大寿命(分别为15.0%, 6.8%, 6.6%, P < 0.01)。用药组 *hsp-70*, *skn-1* 基因表达明显上调(P < 0.01), 而 *akt-2*, *tub-1* 基因表达显著下调(P < 0.01)。结论: 川芎提取物能明显延长线虫寿命, 其机制与调控Insulin/IGF-1信号通路、限食通路部分基因表达有关。

中文关键词: 川芎提取物 秀丽隐杆线虫 寿命 基因

Effect of *Ligusticum chuansiong* extract on lifespan of *Caenorhabditis elegans* and its underlying molecular mechanisms

Abstract: Objective: To explore the effect of *Ligusticum chuansiong* extract (CXE) on lifespan of *Caenorhabditis elegans* and investigate its underlying molecular mechanisms. Method: The lifespan assay was carried out on animals grouped into blank control group and CXE groups with concentration from low to high: 12.5, 25, 50, 100 mg · L⁻¹ by examining the effect of CXE on mean lifespan and maximum lifespan of *C. elegans*. According to the result of lifespan assay, we cultured the animals with the optimal concentration of CXE for 10 days, and tested the expression change of aging-related genes between the control and CXE group by realtime RT-PCR (qRT-PCR). Result: Compared with the control, 25, 50, 100 mg · L⁻¹ CXE all significantly extended the mean lifespan (15.7%, 9.1%, 6.2% respectively) and the maximum lifespan (15.0%, 6.8%, 6.6% respectively) of *C. elegans*. After treatment with 25 mg · L⁻¹ CXE, the expression of *hsp-70*, *skn-1* were obviously up-regulated while the expression of *akt-2*, *tub-1* were significantly down-regulated. Conclusion: CXE significantly extend the lifespan of *C. elegans*, and the underlying molecular mechanism is related with genes of Insulin/IGF-1 signaling pathway and dietary restriction system.

keywords: *Ligusticum chuansiong* extract *Caenorhabditis elegans* lifespan gene

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