



陈小莉[1] 李雅慧[2] 王成[1] 李黎明[1] 苏峰[1] 杨庆[3] 贾凤岐[3] 卫立辛[3]. 同型半胱氨酸促进牛主动脉内皮细胞衰老的研究[J]. 第二军医大学学报, 2007, 28(2): 0162-0165

同型半胱氨酸促进牛主动脉内皮细胞衰老的研究 [点此下载全文](#)

[陈小莉\[1\]](#) [李雅慧\[2\]](#) [王成\[1\]](#) [李黎明\[1\]](#) [苏峰\[1\]](#) [杨庆\[3\]](#) [贾凤岐\[3\]](#) [卫立辛\[3\]](#)

[1]上海市食品药品监督管理局宝山分局, 上海200940 [2]国家食品药品监督管理局保健食品审评中心, 北京100061 [3]第二军医大学东方肝胆外科研究所肿瘤免疫与基因治疗中心, 上海200438

基金项目: 国家重点基础研究发展规划(“973”计划)(G2000057001).

DOI: 10.3724/SP.J.1008.2007.00162

摘要:

目的: 体外观察同型半胱氨酸(HCY)是否促进内皮细胞(EC)衰老及可能的作用机制。**方法:** 胶原酶消化法分离新生牛主动脉内皮细胞, 随机分成4组, 对照组不加HCY, 其余3组分别在DMEM培养液中加入HCY, 使终浓度为0.1、0.5、1.0mmol/L。连续体外培养30d后, 观察细胞形态、衰老相关的 β -半乳糖苷酶染色, 流式细胞仪检测细胞周期, Southern杂交分析端粒长度, 同时检测培养上清中一氧化氮(NO)、内皮素(ET)、氧化型低密度脂蛋白(Ox-LDL)、丙二醛(MDA)浓度和谷胱甘肽过氧化物酶(GSH-Px)活性。**结果:** 各浓度HCY组与对照组相比, 细胞体积增大, 胞内颗粒增多; β -半乳糖苷酶染色阳性细胞增多; 细胞周期的分布发生改变, 表现为G0/G1期细胞增多(P<0.05), S期显著减少(P<0.01); 端粒缩短; 培养上清中NO浓度降低(P<0.05), ET和Ox-LDL升高(P<0.05); 氧化还原指标MDA含量和GSH-Px活性没有明显改变。**结论:** HCY促进体外培养的EC衰老, 其作用机制可能与氧化还原无关。

关键词: 高半胱氨酸 内皮细胞 细胞衰老

Homocysteine accelerates senescence of cultured bovine aortic endothelial cells [Download Fulltext](#)

[CHEN Xiao-li](#) [LI Ya-hui](#) [WANG Cheng](#) [LI Rao-ming](#) [SU Feng](#) [YANG Qing](#) [JIA Feng-qi](#) [WEI Li-xin](#)

1. Baoshan Branch of Shanghai Food and Drug Administration, Shanghai 200940, China; 2. Center for Health Food Evaluation, State Food and Drug Administration, Beijing 100061; 3. Tumor Immunology and Biotherapy Center, Eastern Institute of Hepatobiliary Surgery, Second Military Medical University, Shanghai 200438

Fund Project:

Abstract:

Objective: To investigate the effect of homocysteine (HCY) in promoting senescence of cultured endothelial cells (EC) and the underlying mechanism, **Methods:** Bovine aortic endothelial cells were isolated by enzymatic digestion method from new born calf and were randomly divided into 4 groups. Cells in control group were not treated with HCY and those in the other 3 groups were treated with HCY with the final concentrations being 0.1, 0.5, and 1.0 mmol/L. The cultured cells were observed morphologically and stained with β -Gal; the cell cycle was examined with flow cytometric method (FCM) and the telomere length was analyzed by Southern blotting. Meanwhile, the contents of nitric oxide(NO), endothelin (ET), MDA and the activity of GSH-Px were determined in the supernatants. **Results:** Compared with control group, the 3 HCY groups had more β -Gal positive cells and shorter telomere length. Cells of G0/G1 phase in the 3 HCY groups were significantly increased than those of control group (P<0.05) and the cells of S-phase were significantly decreased (P<0.01); the contents of NO in supernatants of 3 HCY groups were significantly lower than that of control group (P<0.05) and the contents of ET, Ox-LDL were markedly higher than that of control group (P<0.05); the contents of MDA and the activity of GSH-Px were similar in all groups. **Conclusion:** It is indicated that homocysteine may accelerate senescence in endothelial cells, which is not related to oxygenation and reduction.

Keywords: [homocysteine](#) [endothelial cells](#) [cell aging](#)

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

您是第102124位访问者

主办单位: 第二军医大学 出版单位: 《第二军医大学学报》编辑部

单位地址: 上海市翔殷路800号 邮编: 200433 电话: 021-25074340 (25074341, 25074345)-824 传真: 021-25074344 E-mail: bxue@smmu.edu.cn

本系统由北京勤云科技发展有限公司设计