

论著

p63和p73的表达与苯并(a)芘致H1299和16HBE细胞DNA损伤的关系

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收稿日期 2009-2-19 修回日期 2009-3-6 网络版发布日期:

摘要 背景与目的: 研究p63与p73的mRNA表达与BaP致人肺腺癌细胞(H1299)和人支气管上皮细胞(16HBE) DNA损伤的关系、 材料与方法: 分别用不同浓度BaP(8、16、32、64和128 μmol/L)处理H1299和16HBE两种细胞,在4 h和12 h时,使用相应的生化检测试剂盒分别测定细胞裂解液中MDA的水平 and SOD、GSH-Px的活性,用qRT-PCR方法测定处理后细胞的p53、p63、p73、mdm2和mdm4的mRNA水平;用Comet实验评价细胞DNA损伤程度、结果: 16、32和64 μmol/L BaP处理4 h时,两种细胞MDA水平显著性升高,SOD和GSH-Px活性显著性下降(P<0.05)、用BaP处理H1299和16HBE细胞4 h和12 h时均观察到DNA损伤随浓度增加而加重,且呈剂量-效应关系(P<0.01),mdm2、mdm4 mRNA表达水平升高(P<0.01)、不过仅在12 h时p53 基因mRNA表达水平较对照组显著增加(P<0.01)、在4 h和12 h时点,仅在H1299细胞的p63和p73 mRNA表达增加(P<0.05)、 结论: 在BaP致p53缺失的H1299细胞的DNA损伤中,BaP可能通过不依赖p53信号通路激活了p63和p73 mRNA的表达、

关键词 [苯并\(a\)芘](#) [DNA损伤](#) [p63基因](#) [p73基因](#)

Associations between Expressions of p63, p73 and BaP-induced DNA Damage in H1299 and 16HBE Cells

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Abstract BACKGROUND AND AIM: The associations between the changes of p63 and p73 in mRNA levels and the BaP-induced DNA damage in H1299 cells and in 16HBE cells were investigated. MATERIALS AND METHODS: Both H1299 cells and 16HBE cells were treated with BaP at various concentrations (8,16,32,64 and 128 μmol/L) for 4 h and 12 h. At the two time points, the levels of MDA、SOD and GSH-Px were measured using the test kits. The mRNA levels of p53,p63,p73,mdm2 and mdm4 genes were detected by RT-PCR assay. DNA damage in the cells were evaluated by Comet assay. RESULTS: At 4 h,enhanced MDA level was observed (P<0.05). However, levels of SOD and GSH-Px were significantly decreased (P<0.05 for both) in both kinds of cells. After 16HBE and H1299 cells were treated for 4 h and 12 h, DNA damage and mRNA expression levels of mdm2 and mdm4 genes increased in a dose-dependent manner(P<0.01 for all). But enhanced mRNA expression level of p53 was observed only at 12 h(P<0.01). In addition,significant up-regulation of p63 and p73 genes in mRNA levels at the two time points were observed in H1299 cells(P<0.05). CONCLUSION: The BaP-induced DNA damage may be associated with enhanced mRNA levels of p63 and p73 genes in the p53-null H1299 cells.

Keywords [benzo\(a\)pyrene](#) [DNA damage](#) [p63 gene](#) [p73 gene](#)

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