316~320.鸟氨酸脱羧酶和S-甲硫氨酸脱羧酶双反义RNA腺病毒抑制食管癌细胞的增殖和侵袭[J].宋 旭,田 辉,刘贤锡,张 冰,李文军,徐 杰.中国肿瘤生物治疗杂志,2008,15(4)

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摘要：

摘 要 目的: 探讨鸟氨酸脱羧酶（ornithine decarboxylase,ODC） 和 S-甲硫氨酸脱羧酶（s-adenosylmethionine decarboxylase,AdoMetDC）的双反义RNA腺病毒载体(Ad-ODC-AdoMetDCas)对食管癌Eca109细胞增殖和侵袭的抑制作用。方法：重组腺病毒载体Ad-ODC-AdoMetDCas感染食管癌Eca109细胞，应用Western blotting和HPLC分别检测双反义RNA腺病毒对食管癌细胞中ODC和AdoMetDC蛋白表达以及胞内多胺合成的抑制作用。 采用活细胞计数法观察其对食管癌Eca109细胞生长增殖的影响，采用Matrigel侵袭实验检测重组腺病毒载体感染对食管癌Eca109细胞侵袭活性的影响。同时应用裸鼠皮下移植瘤模型观察Ad-ODC-AdoMetDCas对移植食管癌生长增殖的抑制作用。结果： Western bloting证实Ad-ODC-AdoMetDCas可明显抑制食管癌Eca109细胞中ODC和AdoMetDC蛋白的表达,HPLC结果显示食管癌Eca109细胞感染Ad-ODC-AdoMetDCas后细胞内腐胺、精胺、精脒等3种多胺含量都明显降低（ P <0.01）。活细胞计数法表明Ad-ODC-AdoMetDCas对食管癌Eca109细胞生长增殖有明显抑制作用（ P <0.01），Matrigel侵袭实验结果显示Ad-ODC-AdoMetDCas可显著降低食管癌Eca109细胞的体外侵袭能力（ P <0.01）。体内实验显示，双反义RNA腺病毒载体对已形成的裸鼠皮下移植瘤具有明显的抑制作用（ P <0.05或 P <0.01）。结论：ODC和AdoMetDC双反义RNA重组腺病毒能显著抑制食管癌细胞的增殖和侵袭，具有食管癌基因治疗临床应用的潜在价值。

关键词：鸟氨酸脱羧酶 S 甲硫氨酸脱羧酶 反义RNA 重组腺病毒 食管癌 基因治疗

Inhibitory effects of adenovirus mediated biantisense ornithine decarboxylase and s-adenosylmethionine decarboxylase on proliferation and invasion of esophageal cancer cells Download Fulltext

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Abstract:

Abstract Objective: To study the inhibitory effects of Ad ODC AdoMetDCas, a recombinant adenovirus with biantisense RNA of ornithine decarboxylase (ODC) and s adenosylmethionine decarboxylase（AdoMetDC）, on cell proliferation and invasion of esophageal cancer cells. Methods: The Ad ODC AdoMetDCas was used to infect esophageal cancer Eca109 cells. Western blotting was used to examine the protein expression of ODC and AdoMetDC in Eca109 cells. The content of polyamine in Eca109 cells was determined by HPLC. The inhibition on the proliferation of Eca109 cells was investigated by viable cell counting. Matrigel invasion assay was used to study the invasion ability of Eca109 cells. Furthermore, the anti tumor effect of Ad ODC AdoMetDCas was evaluated in a nude mouse xenograft model. Results: Western blotting assay showed that Ad ODC AdoMetDCas inhibited the expression of ODC and AdoMetDC; HPLC indicated that the contents of putrescine, spermidine and spermine were markedly decreased in Eca109 cells after infection with Ad ODC AdoMetDCas（P<0.01）. Viable cell counting showed that Ad ODC AdoMetDCas significantly inhibited the proliferation of Eca109 cells（P<0.01）. Matrigel invasion assay showed that Ad ODC AdoMetDCas significantly decreased the invasion ability of Eca109 cells in vitro(P<0.01). Meanwhile, experiments with nude mouse xenograft model demonstrated that Ad ODC AdoMetDCas had significant anti tumor ability in vivo （P<0.05, P<0.01）. Conclusion: Ad ODC AdoMetDCas can significantly inhibit the proliferation and invasion of esophageal cancer, which makes it a potential therapy for the treatment of esophageal cancer.

Keywords:ornithine decarboxylase(ODC) s adenosylmethionine decarboxylase(AdoMetDC) antisense RNA recombinatnt adenovirus esophageal neoplasms gene therapy

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