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MTA1影响子宫内膜癌细胞侵袭迁移的体外研究

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Effects of MTA1 on Invasion and Migration of Endometrial Carcinoma Cells

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摘要

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摘要 通过siRNA（小干扰RNA）抑制MTA1（metastasis associated gene 1）在子宫内膜癌细胞系HEC-1-A中的表达，研究MTA1对子宫内膜癌侵袭转移能力的影响，并探索抑制子宫内膜癌侵袭转移的潜在靶点。方法：通过脂质体介导方法，将特异性siRNA表达载体psilencer2.0-MTA1-siRNA转染入人子宫内膜癌细胞系HEC-1-A，以转染无关序列组psilencer2.0-neg及non-transfected组做对照，采用RT-PCR以及Western blot检测特异性siRNA对MTA1mRNA及蛋白表达的抑制效果。应用划痕损伤实验及Transwell实验检测MTA1对子宫内膜癌细胞侵袭转移能力的影响，以及体外实验验证应用RNA干扰技术以MTA1为靶点抑制子宫内膜癌细胞侵袭及转移的可行性。结果：RT-PCR及Western blot结果显示，siRNA成功抑制子宫内膜癌细胞系HEC-1-A中MTA1的表达。划痕损伤实验显示转染后划痕损伤愈合明显减慢，迁移率明显降低，Transwell体外侵袭实验结果显示，转染后穿膜细胞百分率显著降低（P<0.05）。结论：体外实验显示，应用脂质体介导的RNA干扰技术，可有效抑制MTA1在子宫内膜癌细胞中的表达，使之生长、侵袭及转移能力均受到抑制，提示MTA1在子宫内膜癌的侵袭转移过程中发挥重要作用，可能成为子宫内膜癌基因治疗的潜在靶点。

关键词： 转移相关基因-1 子宫内膜癌 siRNA 侵袭转移

Abstract: This study investigates the effects of MTA1 (metastasis -associated gene 1) on the invasion and migration of endometrial carcinoma cell line HEC-1-A by depressing the expression of MTA1 using specific small interfering RNA (siRNA)-targeting MTA1. In addition, this study explores the potential target inhibition in the invasion and migration of endometrial carcinoma. Methods: The specific siRNA expression vector psilencer 2.0-MTA1-siRNA was transfected into the HEC-1-A cells through liposome. The groups of unrelated-sequence expression vector psilencer2.0-neg and non-transfected cells were considered as controls. The expression of mRNA and protein of MTA1 were detected using RT-PCR and Western blot assay, respectively. Invasion and migration abilities were evaluated using the scrape wound healing assay and transwell assay. The feasibility of inhibiting the invasion and migration of endometrial carcinoma was verified using RNA interference-targeting MTA1 in vitro. Results: The RT-PCR and Western blot analysis showed that the expression of mRNA and protein of MTA1 were depressed effectively. The scrape wound healed more slowly and the relative percentage of HEC-1-A cells invading into Matrigel decreased in the siRNA-transfected group (P < 0.05). Conclusion: The in vitro experiments have shown that siRNA targeting MTA1 can depress the expression of MTA1 mRNA and protein. Hence, the ability of invasion and migration in HEC-1-A cells can be inhibited. MTA1 plays an important role in the invasion and migration of endometrial carcinoma and may become a new potential target in endometrial carcinoma therapy.

Key words: MTA1 Endometrial carcinoma siRNA Invasion and migration

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