

论著

阴道毛滴虫过氧化物氧化还原酶系统的RNA干扰

章家新¹,傅玉才²,徐晓园²,吴统健¹,曹凤玲¹

1 厦门市仙岳医院检验科,厦门 361012;

2 汕头大学医学院寄生虫学教研室,汕头 515041

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摘要

目的 用干扰RNA的方法特异性降解阴道毛滴虫细胞过氧化物酶(Prx)和硫氧还蛋白还原酶(TrxR)的mRNA,并观察其对虫体生长情况的影响。方法 取患者阴道毛滴虫培养,用酚、氯仿法提取其基因组DNA,反转录合成双链RNA(dsRNA)后用RNase III消化过柱,合成小分子(21~23 bp)干扰RNA(siRNA);由脂质载体介导分A、B、C等3组转染,分别降解毛滴虫细胞Prx、TrxR及Prx+TrxR,转染前的细胞作为对照组(D组);收集转染前、转染后24 h和48 h的毛滴虫细胞,用半定量反转录-PCR(RT-PCR)检测Prx和TrxR的mRNA水平;转染36 h后显微镜下计数并观察细胞活力。结果 转染后阴道毛滴虫Prx和TrxR的mRNA水平显著下降,组间细胞的活力差异无统计学意义($P>0.05$),但组间细胞数差异具有统计学意义($P<0.01$),4组的细胞均数:A、B、C、和D组分别为 $7.2\times 10^7/L$ 、 $14.2\times 10^7/L$ 、 $3.8\times 10^7/L$ 和 $20.3\times 10^7/L$ 。结论 用干扰RNA的方法可以抑制Prx和TrxR的mRNA水平,对阴道毛滴虫的细胞周期有明显延长作用,而对细胞活力无明显影响。

关键词 [阴道毛滴虫](#) [RNA干扰](#) [过氧化物酶](#) [硫氧还蛋白还原酶](#)

分类号

RNA Interference to the Expression of Peroxiredoxin-Related Genes in *Trichomonas vaginalis*

ZHANG Jia-xin, FU Yu-cai, XU Xiao-yuan, WU Tong-jian, CAO Feng-ling

Department of Laboratory, Xiamen Xianyue Hospital, Xiamen 361012, China

Abstract

Objective To inhibit the expression of the target genes of peroxiredoxin (Prx) and thioredoxin reductase (TrxR) by RNA interference and evaluate its effect on the growth of *Trichomonas vaginalis*. Methods Genomic DNA was extracted from cultured *Trichomonas vaginalis* with phenol-chloroform method and was transcribed to double stranded RNA (dsRNA). Short interference RNAs (siRNA, 21-23 bp) synthesized by digestion of dsRNA with RNase III and purified through filter cartridge, were transfected into the cells in three groups (A, B and C) to degrade the target genes of Prx, TrxR and Prx+TrxR through siPORT lipid, respectively, and the untransfected was selected as a control (group D). The levels of Prx and TrxR mRNA were determined 24 h and 48 h post-transfection by relative quantitative RT-PCR, and the growth of *Trichomonas vaginalis* was estimated under microscope 36 h post-transfection. Results *Trichomonas vaginalis* mRNA levels of Prx and TrxR decreased. Though the cell activity showed no significant difference ($P>0.05$) in four groups as expected, a difference existed ($P<0.01$) between the groups in the average of cells ($7.2\times 10^7/L$, $14.2\times 10^7/L$, $3.8\times 10^7/L$ and $20.3\times 10^7/L$ in groups A, B, C and D respectively). Conclusions RNA interference inhibits the expression of the genes of Prx and TrxR and extended *Trichomonas vaginalis* cells cycle considerably, but showed no influence on the cell activity.

Key words [Trichomonas vaginalis](#) [RNA interference](#) [Peroxiredoxin \(Prx\)](#) [Thioredoxin reductase \(TrxR\)](#)

DOI:

通讯作者

作者个人主页

章家新¹;傅玉才²;徐晓园²;吴统健¹;曹凤玲¹

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