

mi RNA标志物在诊断云南省宣威地区早期非吸烟女性肺癌中的价值

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Study of miRNA Signatures as Biomarkers for Early Stage Nonsmoking Female Lung Cancer of Xuanwei County of Yunnan Province

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摘要

目的

初步探索与肿瘤发生相关的miRNA是否可以作为早期诊断云南省宣威地区非吸烟女性肺癌的小分子标志物。方法(1)应用miRNA微阵列芯片分析技术,检测37例宣威地区非吸烟女性肺癌患者和32例非宣威地区非吸烟女性肺癌患者癌组织中的miRNA表达谱,应用实时荧光定量PCR(Q-PCR)对生物芯片分析结果进行验证。(2)实时荧光定量PCR检测16例宣威地区I期非吸烟女性肺癌患者

和宣威肺癌高发区14例良性病变女性血清中miRNA表达水平。用受试者特征曲线(ROC)来评价血清中miRNA作为诊断宣威地区早期非吸烟女性肺癌患者的敏感度和特异性。结果发现与相邻对应非癌肺组织相比癌组织中有31个miRNA表达存在差异,癌组织中表达差异最显著的miRNA通过实时荧光定量PCR证实。其中miR-21、miR-10a、miR-494、miR-22、miR-141及miR-200b在两组癌组

织中的表达水平差异有统计学意义(P<0.05),且均在16例宣威地区I期非吸烟女性肺癌患者和14例良性病变女性血清中稳定表达,其中miR-494、miR-22和miR-200b在两血清中的表达量显著不同(P<0.01)。用其作为分子标志物筛查早期肺癌患者,其敏

感和特异性为85.26%和94.45%。结论从表达的稳定性、敏感度和特异性上看,miR-494、miR-22和miR-200b可作为早期诊断宣

威地区非吸烟女性肺癌患者有潜力的小分子标志物。

关键词: miRNA 非吸烟女性肺癌 分子标志物

Abstract:

Objective

To explore miRNAs that relative to tumorigenesis as biomarkers for early detecting nonsmoking female lung cancer of Xuanwei County.Methods(1) Detecting miRNAs expression in 37 cancer tissues in nonsmoking female lung cancer

of Xuanwei County and 32 cancer tissues in individual cases by microarray hybridization.To validate the microarray analysis result by RT-qPCR.(2) Evaluating plasma expressions of the miRNAs in 16 stage I nonsmoking female lung cancer of Xuanwei County patients and 14 counterpart benign cases.Evaluating diagnostic sensitivity

and specificity of the miRNA in plasma for nonsmoking female lung cancer of Xuanwei County by Receiver-

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Operator
Characteristic curve (ROC) .ResultsThere were 31 miRNAs differentially expressed in all tumor tissues compared to their corresponding normal lung cancer.The over expressions of the genes in tumors were confirmed by RT-qPCR.The miR-21,miR-10a,miR-494,miR-22,miR-141 and miR-200b expression levels between two cancer tissues were different ($P<0.05$) .The six miRNAs were stably present and reliably detectable in plasma.miR-494,miR-22 and miR

-200b expression levels were significant different between two plasmas ($P<0.01$) .The use of the three genes produced 85.26% sensitivity and 94.45% specificity in distinguishing nonsmoking female lung cancer of Xuanwei County patients from the female crowd.ConclusionFrom express stability,sensitivity and specificity that the identified three miRNAs provide potential biomarkers for early detection of nonsmoking female lung cancer of Xuanwei County.

Key words: miRNA Nonsmoking female lung cancer Biomarks

收稿日期: 2011-08-11;

基金资助:

云南省肿瘤医院高发肺癌防治研究省创新团队基金资助项目(20080C014)

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引用本文:

李光剑,黄云超,何越峰等. miRNA标志物在诊断云南省宣威地区早期非吸烟女性肺癌中的价值[J]. 肿瘤防治研究, 2012, 39(7): 802-806.

Li Guangjian,Huang Yunchao,He Yuefeng et al. Study of miRNA Signatures as Biomarkers for Early Stage Nonsmoking Female Lung Cancer of Xuanwei County of Yunnan Province[J]. Cancer Research on Prevention and Treatment, 2012, 39(7): 802-806.

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