



Circulating miR-125b as a biomarker of Ewing's sarcoma in Chinese children

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ABSTRACT. Previous studies indicated that microRNA-125b (miR-125b) has an important role in the progression of Ewing's sarcoma (ES). The purpose of the current study was to examine expression changes of miR-125b in the serum of ES patients and evaluate if the expression level of miR-125b could serve as a new biomarker for ES. This study was performed on patients who underwent surgical resection at our hospital between 2005 and 2013 after an initial diagnosis of ES. We measured serum miR-125b levels in 63 patients with ES and 126 healthy control patients using a real-time quantitative reverse transcriptase-PCR (qRT-PCR) method. Expression levels of serum miR-125b were distinctly decreased in ES patients when compared with healthy controls ($P < 0.001$). ES cases that had a poor response to chemotherapy presented a significant down-regulation of miR-125b ($P = 0.001$). The ROC curve showed that the serum miR-125b could serve as a valuable biomarker for differentiating ES patients from healthy controls with an AUC of 0.879 (95%CI = 0.817-0.924; $P < 0.001$). At a cut-off value of 2.203 for miR-125b, the sensitivity was 72.8% and the specificity was 87.2% in

discriminating ES from the controls. Our results indicate that serum miR-125b may serve as a useful noninvasive biomarker for ES.

Key words: Ewing's sarcoma; miR-125; Biomarker; Serum; Diagnosis