EXPRESSION OF microRNAS 21 AND 145 DURING PROGRESSION OF HUMAN MELANOMA

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Introduction and objectives: MicroRNAs (miRNAs) are a class of naturally occurring small non-coding RNAs that control gene expression by targeting mRNAs for translational repression or degradation. Recent studies indicate that many miRNAs, including miR-21 and miR-145, are aberrantly expressed in various human cancers. However, there is no report concerning the expression of miRNAs during tumor progression. Here, we investigated the expression of miR-21 and miR-145 in melanocytic cells isolated from different stages (radial, vertical and metastatic) of human melanoma progression. **Results**: The expression of mature miR-21 and miR-145 was evaluated by using stem-loop RT followed by TaqMan real-time PCR analysis. Our results showed that miR-21 is overexpressed (>3-fold) whereas miR-145 is downregulated (>100-fold) in the metastatic stage when compared with radial stage. **Conclusions**: This study is the first demonstration of an aberrant expression of miRNAs during tumor progression, suggesting that miR-21 and miR-145 could be involved in melanoma development. The correlation between miRNAs expression and their effects on targets mRNAs of proto-oncogenes and tumor suppressor genes is still not fully understood. Thus, additional work is required to elucidate the role played by miR-21 and miR-145 in human melanoma progression.

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Key words: microRNA, human melanoma, tumor progression.