MELANOMA AND MELANOCYTIC NAEVI

α-ENOLASE PROMOTES TUMORIGENESIS AND METASTASIS IN MALIGNANT MELANOMA

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Introduction: Malignant melanoma is a cutaneous tumor with poor prognosis. ENO1 is a conserved glycolytic enzyme involved in tumorigenesis, which was verified as a potent promoter in several types of cancer, including oral squamous cell carcinoma, colorectal cancer, and lung adenocarcinomas et al, but its clinical significance in Malignant melanoma (MM) has remained unclear.

Objective: Combine chip-based high-throughput analysis to identify cell signals involved in glucose metabolism and then validated the gene expression and functional role of hub gene ENO1 in MM.

Materials and Methods: The gene expression profile GSE1965 were downloaded from Gene Expression Omnibus. Then we performed differentially gene expression analysis, protein-protein interaction network and selected the hub gene ENO1 for in-depth research. The expression of ENO1 was examined in MM and normal tissues, human MM cell line A375 as well as human normal epidermal keratinocytes HEKa and HacaT by quantitative real-time reverse transcription PCR (qRT-PCR), immunohistochemistry, and western blot respectively. Transwell assays were carried out to testify the migration and invasion in vitro.

Results: The expression of ENO1 was significantly higher in MM cell line compared with normal keratinocytes. Similarly, its expression was increased in MM tissues in comparison to normal tissues. ENO1 knockdown markedly inhibited MM cell proliferation, migration, and invasion in vitro.

Conclusions: The up-regulation of ENO1 is related to the occurrence and development of malignant melanoma. Thus, ENO1 might serve as a potential molecular therapeutic target for MM treatment.