POSTER

IDENTIFICATION OF MIR-129-5P AS A COMMON REGULATOR OF E3 UBIQUITIN LIGASES WITH A POTENTIAL ROLE IN GLIOBLASTOMA PROGRESSION

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Glioblastoma multiforme (GBM) is the most aggressive primary brain tumor in adults, characterized by marked molecular heterogeneity and rapid progression. Therefore, the identification of predictive biomarkers and novel therapeutic targets remains a major challenge. Among emerging regulatory mechanisms, microRNAs (miRNAs) and the ubiquitin–proteasome system have been increasingly implicated in glioma biology, playing key roles in tumor progression and therapy resistance. Based on these premises, this study aimed to identify novel prognostic biomarkers in GBM, focusing on miRNAs expression and activity. By small RNAseq analysis on paired primary and relapsed GBM tissues, we identified a subset of differentially expressed miRNAs associated to recurrence. Among these, miR-129-5p emerged as a candidate of interest, being predicted to regulate both MEX3A and RNF182, two E3 ubiquitin ligases which have been found to be deregulated in gliomas. We confirm that miR-129-5p overexpression is able to reduce MEX3A and RNF182 expression in U87MG cells. We also observed that miR-129-5p overexpression induced an impairment of cell proliferation, and the acquisition of a differentiated phenotype. Taken together, these data suggest miRNA–E3 ligase crosstalk as a previously underexplored regulatory network in GBM progression, nominating miR-129-5p as a putative prognostic biomarker and potential therapeutic target. Ongoing studies in advanced preclinical systems, including patient-derived cell models, will further refine the functional relevance of such miRNA/E3 ligase axis and its translational potential for GBM management.

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