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Role of miR-200c in regulating signaling pathways dependent on EGFR amplification in *in vitro* glioblastomamultiforme tumors

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Primary Glioblastomamultiforme (GBM) is the most frequent and most malignant neoplasm of the human nervous system that, despite current therapies, usually causes the patient's death within one year following diagnosis.Molecular screening for gene amplification revealed frequent amplification of the EGFR, observed in about 35-70% of glioblastomas.Activation of EGFR is induced by ligand binding that leads to tightly regulated stimulation of proliferative and survival cell signaling pathways; most notably the RAS/RAF/MEK/MAPK and PI3K/Akt.

Results: Results indicate that miRNAs expression profiles distinguish between differentspatterns of amplification of EGFR. microRNAs have emerged as important regulators of growth, differentiation, and apoptosis by altering the expression of other genes and play a role in tumorigenesis and progression. However, its role in glioblastomas is largely unknown. Our findings indicate that miR-200c is dysregulated and changed their levels expression in the different grades of tumors suggesting a potential role for these molecules in the pathogenesis of cancer. Our objectives are to study the role of miR-200c in regulating signaling pathways dependent on EGFR in Glioblastomamultiformein vitro. Cell lines and primary cultures of human glioblastomaswill be used by using overexpression and inhibition miRNA techniques.We hypothesize that the loss of miR-200c expression could play a significant role in the initiation of an invasive phenotype and define a pattern of aggressiveness in this type of cancer. Therefore, we will investigate the impact of certain signalling proteins on glioma-cell characteristics like, e.g. proliferation rate, invasiveness, adhesion capability, apoptosis, and epithelial mesenchymal transition.

Biography

Lisandra Munoz Hidalgo has completed her master study and she is PhD student in the group of Neurophatology, Departament of Pathology, Medical School of the University of Valencia, Spain. She is a young researcher of 26 years and has performed her research in central nervous system tumors and has published articles in high impact journals.

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