MELANOMA AND MELANOCYTIC NAEVI

HOW DOES CELLULAR RESPONSE DRIVE TUMORIGENESIS IN MELANOMA CELLS? AN IN VITRO STUDY

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Introduction: Tumorigenesis includes a series of biomolecular events, not well clarified. Melanoma cells develop adaptive responses to cope specific conditions of the microenvironment, characterized by stress stimuli and a push to fuel continue proliferation. These signals induce the activation of cellular response to stress.

Objective: The aim of our study is to analyze the activation of these pathways in an in vitro melanoma model.

Materials and methods: Metastatic melanoma cell lines BRAF wild-type (wt) and BRAF-mutated were analyzed. We estimated the phosphorylated eIF2α (peIF2α), LC3 II/I ratio, TFEB levels by means of Western blotting. Furthermore, confocal microscopy and mass spettrometry were used to highlight the localization of peIF2α.

Results: The most striking result is the finding of nuclear localization of peIF2α. Our results show higher levels of peIF2α in the BRAF-mutated cells, as compared to BRAFwt. Furthermore, we found higher levels of LC3II/I ratio and TFEB in BRAF-mutated cells.

Conclusions: This is the first report of the nuclear localization of peIF2α. Preliminary results suggest its interaction with RNA polymerase. Therefore, its nuclear localization would be crucial in ER stress response and driving metastatic spread. In addition, we found higher levels of autophagy and TFEB in BRAF-mutated cell lines, leading to support the activation of autophagy through the lysosomal pathway.