## The international debate on the antagonism between the RNA binding protein Musashi1 and miR-137 and its potential impact on neurogenesis and glioblastoma development

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n the last decade, an ever-growing number of connections between microRNAs (miRNAs) and RNA-binding proteins (RBPs) has uncovered a new level of complexity of gene expression regulation in cancer. Our lab has been studying Musashi1 (Msi1), an RBP expressed in undifferentiated neural stem/ precursor cells during both, embryonic an adult stages (Sakakibara et al. 1996). High levels of Msi1 have been reported in different tumors, including glioblastoma (GBM) (Ma et al. 2008). We are also interested in a small group of miRNAs that include miR-137, that induces neuronal differentiation of stem cells and inhibit proliferation of GBM cell lines (Santos et al. 2016). Vo et al. (2011) previously shown that Msi1 is regulated by several tumor suppressor miRNAs (Vo et al. 2011), and that they have opposite roles in neurogenesis and glioblastoma development. Here, we unveil a novel aspect of this antagonistic relationship. In the particular case of Msi1 and miR-137, our results prove that both share a large number of interconnected target genes implicated in functions critical to neurogenesis and glioblastoma growth. We put forward a model in which Msi1 and miR-137 regulate this network of targets in opposite directions (activation vs. repression) to contribute to cell fate decisions (self-renewal, differentiation, tumorigenesis) in glioblastoma.

**Biography:** Mitzli Xochitl Velasco López is a Ph.D. student of the Biomedical Sciences Program, The National Autonomous University of Mexico (UNAM), under the advice of Greco Hernández, of the Translation and Cancer Lab at National Institute of Cancer (INCan), Mexico City. She has done a research stay in the Lab of Luiz Penalva, University of Texas. Her research is focused on the study post-transcriptional mechanisms involved in cancer development. She is studying how RNA-binding proteins and microRNAs are involved at the interesting intersection between neurogenesis and brain tumor development, especially in glioblastoma

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