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In vivo detection and manipulation of microRNAs in the mouse brain

All the neurons of the CNS are generated from the differentiation of neural stem-cells (neuroepithelial cells). The target of my research is to study the cell biological mechanisms controlling the switch of neuroepithelial cells from proliferation to differentiation in the mouse embryo. MicroRNAs (miRNAs) are a class of 19-25 nucleotide non-coding RNAs that have recently emerged as major regulators of development in plants and animals. The mechanism of miRNAs action is thought to occur mainly by reducing the translation and/or the stability of specific mRNAs targets. In particular, in *C. elegans* miRNAs are known to regulate the timing of the switch between different larval stages. I am interested in understanding if miRNAs play a role in controlling the timing of the switch from proliferation to differentiation of mammalian neuroepithelial cells, which ultimately determines the number of neurons generated in the CNS



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