

Project #12

Title: Small noncoding RNA profiling in human biofluids of Autism Spectrum Disorder (ASD) individuals

Description: miRNAs are short RNA (22-25 nucleotides) that comprises about two-thirds of the human mRNAs. Each miRNA targets a high number of potential mRNAs, indicating the essential role of miRNA regulation machinery in modulating gene networks. Although miRNAs are expressed in different tissues, CNS expresses the highest percentage ~ 70%. These miRNAs are highly ubiquitous and vary dramatically through brain growth and development and within different regions in the brain. In recent studies using serum and saliva samples from ASD patients and healthy controls, the expression profile of circulating miRNA in ASD patients was significantly different than that of the control (Hicks et al., 2019; Kichukova et al., 2017; Mundalil et al., 2014). This highlights the possibility of using specific circulating miRNAs as potential biomarkers for ASD. We aim to track possible circulating miRNA as biomarkers in biofluids that will be identified by small RNA sequencing using Next Generation Sequencing (NGS).

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