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GENOMICS APPROACHES USING CEREBRAL ORGANOIDS FOR GENETICS-DRIVEN THERAPEUTICS IN **AUTISM AND ALZHEIMER'S DISEASE**

Our group works on identifying gene and genotype to cell type-specific molecular processes using high-throughput methods on donor-derived and CRISPR/Cas9-edited cerebral organoids. We continue to develop computational methods for identifying critical cell types and cell type-specific driver genes underlying the 16p11.2 locus associated with autism, with the goal of identifying cell type-specific gene targets for therapeutics. In parallel, our group used transcriptomics-based methods to study the contribution of viral infections in Alzheimer's Disease using cerebral organoids, and in combination with the large-scale genomics data generated from human samples, we aim to identify gene targets for therapeutics development in a subset of patients with Alzheimer's Disease.