Spatiotempotal properties of NDD genes during development

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what to review

- human brain single cell rna-seq studies
- reread papers used for PhD proposal
- number and types of samples
- method used for sequencing
- data availablity
- main conclusions of the studies
- this kind of analysis in other areas

1 Introduction

main points to cover

- Brain development

2 Neurodevelopmental disoders

3 Co-mobidity of NDDs

4 Expression studies

- what are the datasets available
- where am i going to get the genelists from
- what gene ontologies am I getting with my genes
- current co-expression networks that are available
- lack of ID gene networks
- benchmark potentially?
- Issues with bulk rna?

5 Thesis aims

- To comprehensively characterize the expression properties of ID and CP enes in the normal human brain
  - To determine whether ID and CP genes are expressed in a cell-type speciic mannner using single-cell RNA-seq data
  - To characterize the developmental trajectory of gene expression for ID and CP genes and assess their expression during cellular maturation in brain organiods and assess their expression across multiple fetail developmental periods

  - To characterize the spatial and temporal properties of ID and CP gene expression in the adult brain, by assessing age-dependent changes brain-region and cortical layer-specificity

- To determine whether convergent gene expression changes are observed in ID and CP in patient-derived cells with heterogenous mutations