

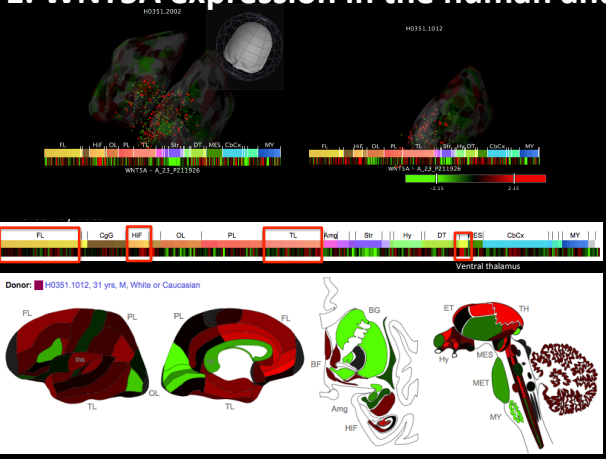
WNT5A

- WNT signaling pathway (β -catenin independent)
- Oncogene & Tumor Suppressor in 1!
- Upregulated in human gliomas & human glioma cell lines
- Overexpression correlates with
 - increasing tumor grade in human gliomas
 - infiltrative capacity in human glioma cell lines

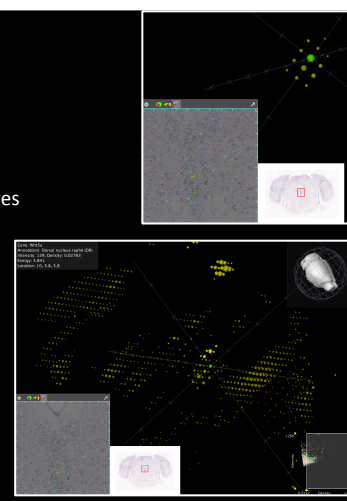
Questions Asked

- I. Which anatomical areas in the brain show WNT5a expression?
- II. Are there changes in expression levels and anatomical areas in the brain during development or over time?
- III. What is the deal with WNT-signaling pathway-related genes in human brain development?

1. WNT5A expression in the human and mouse adult brain



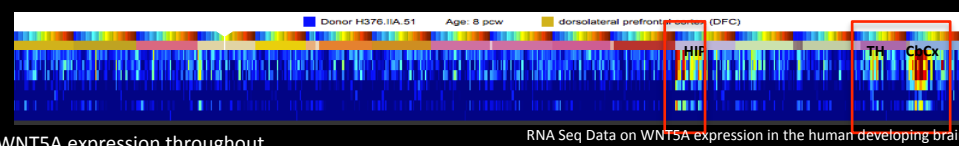
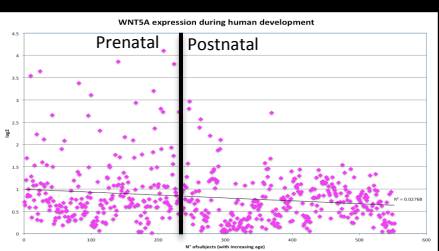
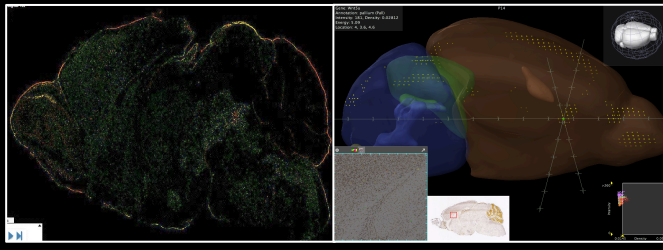
WNT5A is expressed in the human brain in various brain regions with high expression in cortical and hippocampal areas



2. Changes in WNT5A expression during mouse and human brain development

Identified Brain Areas in Mouse

- E11.5 Prosomere1 (Dienc), mesomere 1 (Midbrain), (Nose)
- E13.5 Hindbrain: Isthmus, rhombomere 1+2
- E15.5 Pallium (medial), dorsal diencephalon, pontine hinbrain, cerebellar vermis
- E18.5 Pallium, diencephalon, pontine hindbrain
- P14 Pallium, hindbrain, medullary rhombomeres

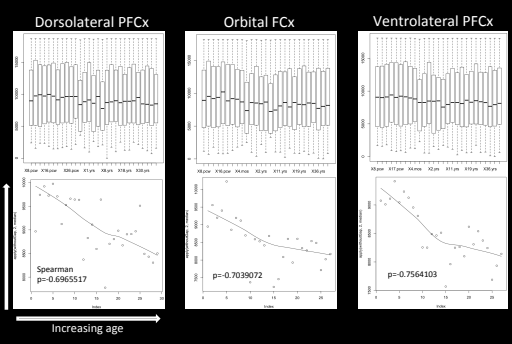


WNT5A expression throughout human brain development starting from 8 weeks post conception up to 40 years of age

Identified Brain Areas in Human

- Hippocampal F.
- Thalamus
- Cerebral Cortex

3. WNT signaling pathway related genes in human brain development



Averaged expression of WNT-pathway related genes in three different areas of the prefrontal cortex shows a time-dependent decrease throughout human development

Functional molecular interactions of WNT-pathway related genes in an edge-weighted spring embedded layout (using Cytoscape software)

