Developmental Expression of Muscarinic Receptors in the Basolateral Amygdala

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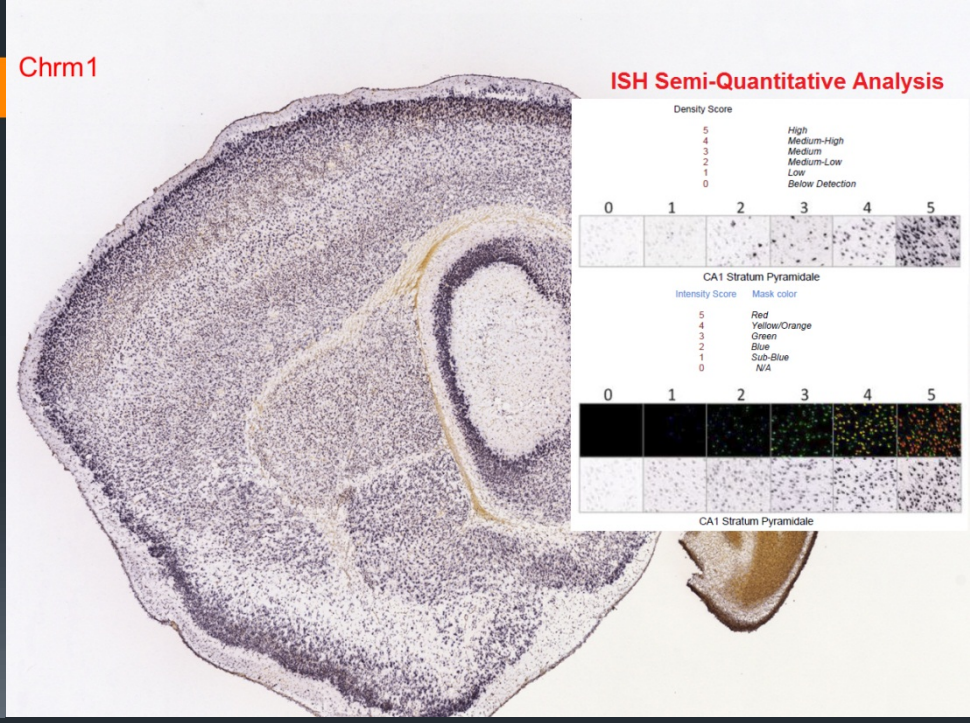

Mouse Developmental ISH in BLA

Chrm5 not detected

The Question

- Why do immature rats have cholinergic seizures faster compared to adults and why is atropine sulfate a more effective anticonvulsant in these animals?

Hypothesis

- The expression of the excitatory muscarinic receptors is higher in early development compared to the inhibitory subtypes

Methods

- Manually annotate the basolateral amygdala throughout mouse postnatal development using amygdala genes of interest from the non-human primate study as well as finding genes that are selective for the basolateral amygdala from AGEA
- Perform a semi-quantitative analysis of muscarinic receptor expression throughout development in the basolateral amygdala

Conclusions

- The inhibitory M2 mAChR (Chrm2) does not reach its greatest density and intensity of expression until maturation and may contribute to the susceptibility of immature animals to seizures.

Future Directions

- Analyze ISH for: Acetylcholinesterase, Choline Transporter, Choline Acetyltransferase, Vesicular Acetylcholine transferase
- Developmental transcriptome for cholinergic markers
- ISH Data for non-human primate, and developing human brain