Quantifying Chloride Dynamics of the Purkinje Cell

A. Goals:

-Map out the fewer than 1% of inhibitory synapses of the Purkinje cell's dendrites to quantify the effects of inhibition on the cell.

B. Brief Description:

-Using an adeno-associated virus to infect Purkinje Cells in a Parvalbumin mouse line we expect to see Clomeleon expression after 14 days of the initial infection.

-In the presence of Chloride the Clomeleon will change its fluorescence allowing us to quantify the distribution and flow of Chloride as it enters the Purkinje Cell.

-Once quantified we will be able to adjust our models to demonstrate how GABAA synapses influence the total cerebellar output, possibly through shunting inhibition.

C. Heights of Achievements this semester:

- Parvalbumin mouse colony fully established.
- Virus has arrived from Germany.
- Current surgery survival rate at 80%.

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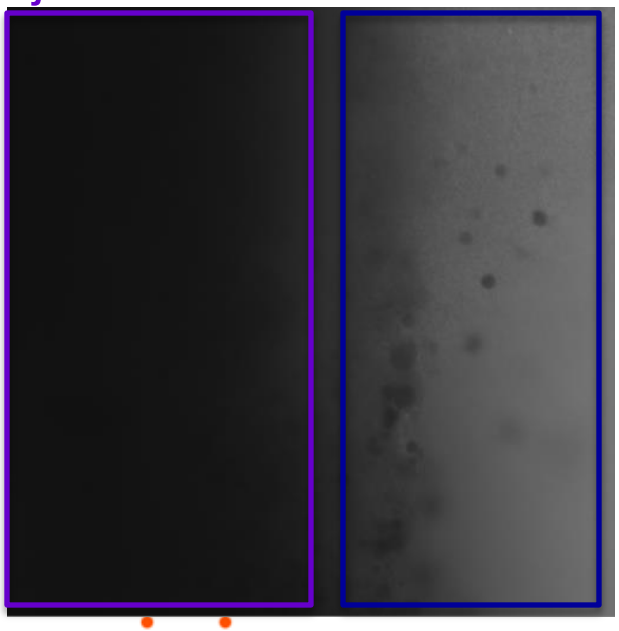
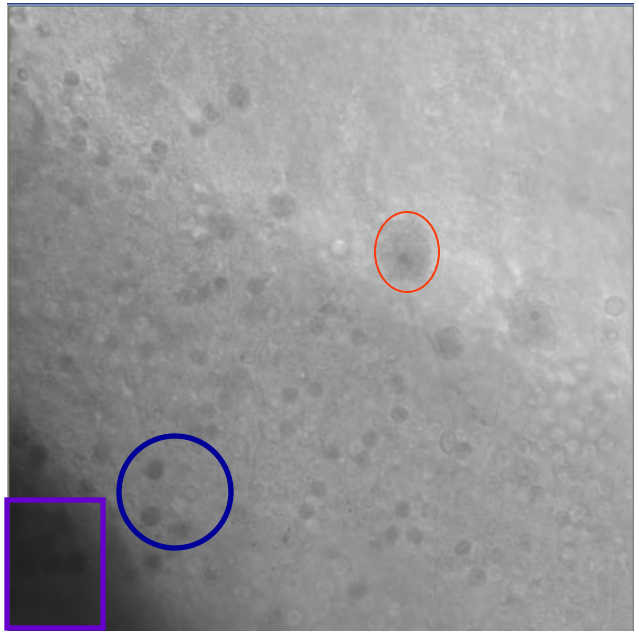
- Sham surgery with dye showing diffusion of particulates from initial injection site.



- Sham surgery with dye showing diffusion of particulates from the injection site toward Purkinje cells



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