

Gliogenesis control of brain neuroplasticity, neurophysiology and cognitive function

Bursary 427/14

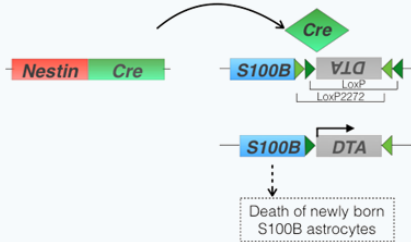
PROJECT AIM

Unveil how *adult-born astrocytes* and control neuroplasticity, neurophysiology and complex behaviors in health and depression.

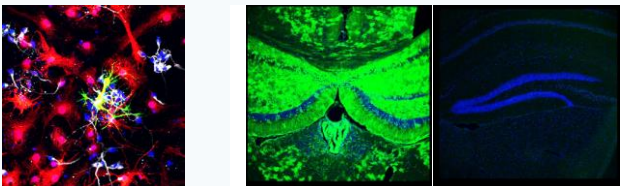
Develop an unprecedented **viral genetic tool** to specifically **ablate adult-born astrocytes**

Genetic tools development for adult-born astrocytes targeted ablation

* Unique tools to selectively ablate S100 β -expressing hABAs or hPre-As

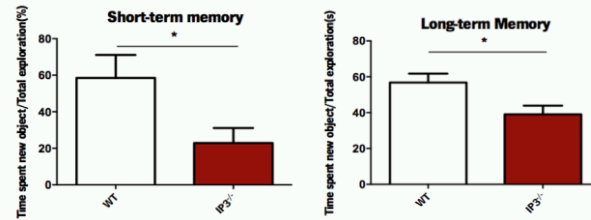


* Selectivity and efficacy testing *in vitro* and *in vivo*

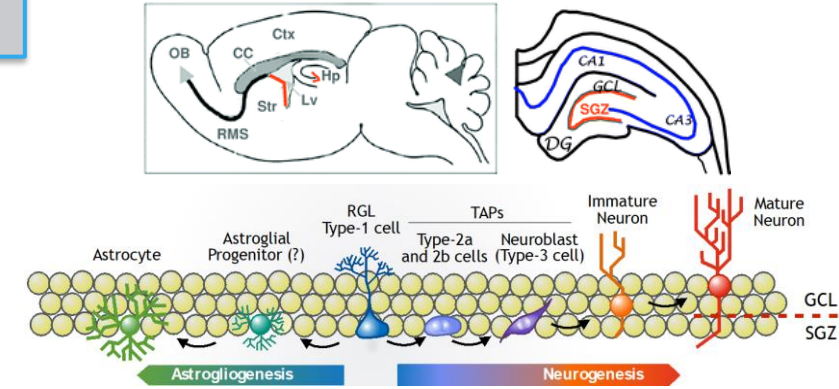
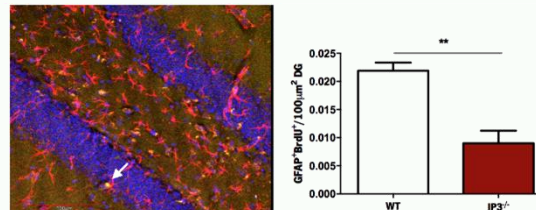


In vivo approach (IP3R2 KO mice) to test the impact of astrocytic dysfunctions in several behavioral dimensions and in hippocampal astrogliogenesis.

* Impact on behavior



* Impact in adult astrogliogenesis



Publications resulting from this project so far:

- Mateus-Pinheiro et al, 2017. *Molecular Psychiatry* Dec;22(12):1725-1734. - *Featured article*.
- Guerra-Gomes S. et al, 2018. *Frontiers in Cellular Neuroscience*. Jan 17;11:427.
- Mateus-Pinheiro et al, 2018. *Journal of Experimental Neuroscience*. Apr 2;12:1179069518766897.
- Guerra-Gomes S. et al, 2018. *Frontiers in Cellular Neuroscience*. Nov 5;12:379.
- Antunes C. et al, 2019. *Neuroscience & Biobehavioral Reviews*. Jul;102:337-344.
- Antunes C. et al, 2021. *Molecular Psychiatry*, May;26(5):1445-1457
- Martins-Macedo et al, 2021. *Glia*, 69(3), pp. 513–531
- Mateus-Pinheiro et al, 2021. *Molecular Psychiatry*, in press