SAGE® Rat Models for Optogenetics

Optogenetics . . . now in your favourite species

Horizon has developed the first comprehensive portfolio of rat models for optogenetics. Included are Cre- driver rats, as well as florescence reporter and opsin expressing rats.

SAGE®

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horizon®

Take advantage of the larger brain size of the rat coupled with its richer behavioral profile. Unlike BAC models, our rats express cre recombinase off of the endogenous promoters, so you don't have to worry about ectopic expression or random integration and potential gene disruption.

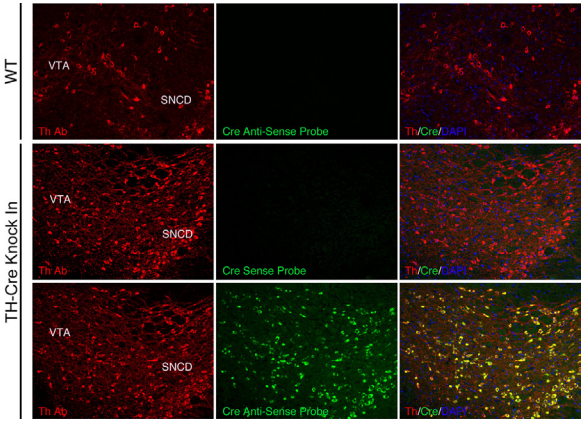
Our tdTomato reporter rat possesses the fluorophore tdTomato, sitting behind a floxed stop codon in the Rosa26 locus. Simply introduce Cre- recombinase through viral transduction or by crossing with one of our Cre- driver rats, and observe tdTomato fluorescence anywhere Cre- is expressed.

Horizon has generated two opsin lines to help you simplify your optogenetics experiments by eliminating the need for viral transduction. Possessing either Channelrhodopsin (excitatory) or Halorhodopsin (inhibitory) behind a floxed stop codon, simply breed with our Cre- driver rats to get neuronal subtype-specific expression of your opsin of choice.

Currently available rat models:

Cre- Driver Rat Models
TH-Cre
Dat-Cre
Camk2a-Cre
Vgat-Cre
VIP-Cre
Tph2-Cre
5Ht3a-Cre

Opsin and Reporter Rat Models
Channelrhodopsin
Halorhodopsin
TdTomato Reporter



Tyrosine hydroxylase (TH, red) and cre-recombinase (Cre, green) are colocalized in TH-Cre rats (overlay).

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