

# Advanced Parkinson's disease modelling $\alpha$ -syn-pff injection to striatum

**Species:** Rat

**Genes:** N/A

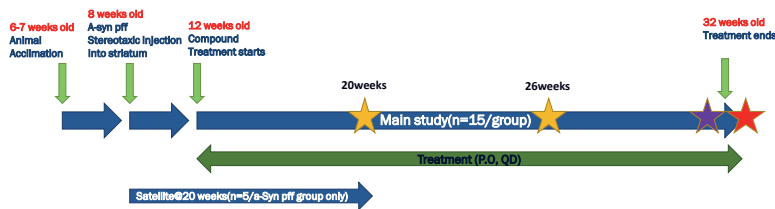
**Modification:** Stereotactic pff injection to the brain

**Disease Relevance:** Brain inflammation, protein misfolding pathology, PD-like symptoms

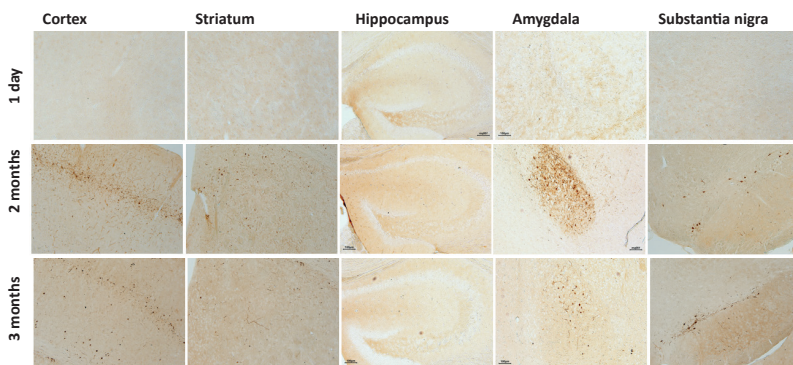
**Strain Name:** SD Rats (female and/or male)

## Alpha-synuclein ( $\alpha$ -syn) protofibrils facilitate the formation of protein aggregates in the brain

Parkinson's disease has been extensively modelled in rodents. However, the ability to reliably recreate the protein misfolding, inflammatory responses, psychiatric and motor symptoms of PD have been hard to recreate. This model facilitates a quicker induction of  $\alpha$ -syn aggregates in the brain of the rat and is analogous to that which occurs in the human.



The paradigm for the  $\alpha$ -syn PFF injection to the brain. Recommended N=10-15/group with low mortality and 95% effective in creating aggregates, behavioral and motor deficits and tissue changes in accordance with Parkinsonian pathologies.



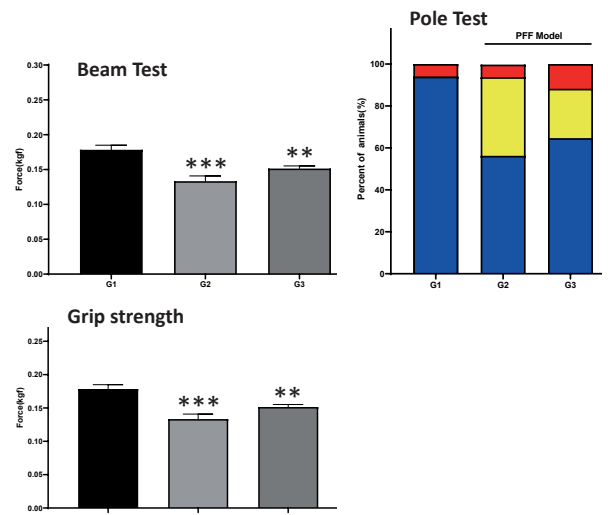
Clear deposition of protein aggregates in specific brain structures including the hippocampus and the substantia nigra. The pff brain injection model has a relatively fast onset of pathologies associated with PD.



## Home Cage / Group Housed Analysis

### Behavioural Phenotypes

1. Total Moving Distance (mm)
2. Total Moving Time (s)
3. Separation/Isolation Distance (mm)
4. Isolated Time (s)
5. Thigmotactic Time (s)
6. In Center Zone Time (s)
7. Drinking Time (s)



In basic tests of coordination and motor deficit the pff model provides a clear therapeutic window for the induced deficits. Therefore, the model is both a good model for measuring the PD-like motor deficit as well as immunohistochemical and biochemical analysis.

