



**HAL**  
open science

## **Animal models in neurodegenerative diseases.**

Etienne Charles Hirsch

► **To cite this version:**

Etienne Charles Hirsch. Animal models in neurodegenerative diseases.. Journal of neural transmission. Supplementum., 2007, 72, pp.87-90. inserm-00191984

**HAL Id: inserm-00191984**

**<https://inserm.hal.science/inserm-00191984>**

Submitted on 26 Nov 2007

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Table 1. *Animal models of Parkinson's disease*

| Type of model  | Dopaminergic neuronal loss      | Non-dopaminergic neuronal loss | Protein accumulation or inclusion | Symptoms                        | Some references  |
|--|---------------------------------|--------------------------------|-----------------------------------|---------------------------------|--|
| MPTP acute mice/monkeys                                | yes                             | no                             | no                                | yes but different from PD       | Dauer et al. 2003; Rousselet et al. 2003                           |
| MPTP chronic osmotic pumps mice                        | yes                             | no                             | $\alpha$ -synuclein               |                                 | Fornai et al. 2005   |
| Rotenone rat   | yes but variable                | yes but discussed              | $\alpha$ -synuclein and tau       | yes                             | Betarbet et al. 2000; Höglinger et al. 2003; Höglinger et al. 2005 |
| Annonacine rat   | yes                             | yes                            | tau                               | yes                             | Champy et al. 2004   |
| Paraquat rat   | yes                             | no                             | ?                                 | ?                               | McCormack et al. 2002  |
| 6OHDA intracerebral rat or mouse                       | yes                             | no                             | no                                | yes                             | Pycock, 1980; Sauer et al. 1994                                    |
| Proteasome inhibition by peripheral injection          | yes but has not been reproduced | no but has not been reproduced | yes but has not been reproduced   | yes but has not been reproduced | McNaught et al. 2004; Bové et al. 2006                             |
| LPS intra nigral injection                             | yes                             | ?                              | no                                | yes                             | Herrera et al 2000   |
| Prenatal exposure to LPS                               | yes                             |                                | yes                               | yes, in aged animals            | Ling et al. 2004   |
| $\alpha$ -synuclein over expression or mutation in fly | yes                             | ?                              | yes                               | yes                             | Feany et al. 2000  |
| $\alpha$ -synuclein mouse                              | no                              | no                             | yes                               | no                              | Rockenstein et al. 2002; Song et al. 2004; Fleming et al. 2004     |

|                   |     |    |    |     |  |
|-------------------|-----|----|----|-----|--|
| DJ1 KO mouse      | no  | no | no | no  | Goldberg et al. 2005;<br>Kim et al. 2005   |
| Parkin KO mouse   | no  | no | no | yes | Itier et al. 2003;<br>Goldberg et al. 2003;<br>Palacino et al. 2005;<br>Von Coelln et al. 2004 |
| Pink 1 drosophila | yes | no | ?  | yes | Park et al. 2006   |