

Model Overview

CNS|CRO's proprietary animal model of Parkinson's Disease utilizes a neurotoxin that causes a slowly developing and progressive series of parkinsonism features in rats. First documented in humans following dietary exposure to the cycad seed in the 1940's on the island of Guam, the neurotoxin was identified and patented by Neurodyn Life Sciences Inc, CNS|CRO's parent company.

Differentiation & Advantages

- Progressive
- Environmentally based
- Recapitulates multiple facets of parkinsonism and PD dementia, including the progressive appearance and regional spread of alpha-synucleinopathy



This is a slowly developing and progressive parkinsonism model, allowing for investigation of therapeutics at multiple time points throughout disease progression

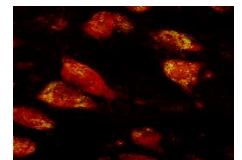
Validation

Construct validity:

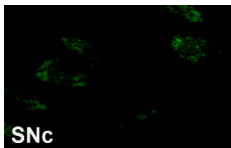
- Etiologic agent linked to human disease is used to *recreate* disease in animals

Face validity:

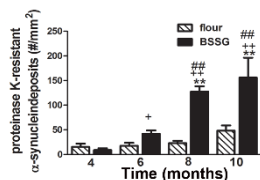
- Pre-motor appearance of olfactory deficits
- Progressive development of locomotion and locomotor control deficits, with an initial unilateral phenotype
- Progressive loss of dopaminergic neurons
- Progressive development and regional spread of α -synuclein aggregates
- Late emerging cognitive deficits



Insoluble synuclein aggregates
(Van Kampen et al [2015] PLOS One)



SNc
Representative photomicrograph of proteinase K resistant α -synuclein aggregates in the substantia nigra.



Average density of proteinase K-resistant α -synuclein aggregates in substantia nigra.
(Van Kampen et al [2015] PLOS One)

Predictive validity:

- L-Dopa responsive deficits of locomotion and locomotor control
- Neuroprotection demonstrated with proprietary natural product extract (ND1208)