

# Translational Neuroinflammation & Aged Rat Pharmacology

Bridging preclinical discovery to clinical success

## An Integrated Translational Platform

- Clinically relevant aging biology
- Integrated PK/PD expertise
- Translational biomarker strategy
- Decision-ready data packages

**Exposure -> biology -> behavior**



## Clinical Relevance

### Why Aged Rat Models?

Aged rats capture biology younger models can miss.

1. **Chronic neuroinflammation** – Inflammation, immunosenescence and microglial priming
2. **Altered exposure** – BBB dysfunction and age-related drug disposition
3. **Functional decline** – Age-linked cognitive, behavioral and motor changes

More Relevant to Age-Related CNS Disorders

- Alzheimer's
- Parkinson's
- MS

Supporting confident therapeutic decisions.

## Our Integrated Capabilities



### Aged Rat PK/PD Studies

Link Exposure to Target Biology

- Plasma, CSF & brain pharmacokinetics
- Brain penetration and exposure-response
- PK/PD modeling
- Target engagement
- Biomarker-driven dose optimization



### Neuroinflammation & Disease Models

Model the Biology That Drives Progression

- Natural aging / inflammation
- LPS, IFN-alpha, Poly (I:C) induced neuroinflammation
- Neurodegenerative disease models



### Translational Biomarker Platform

Track Pathway and Cellular Response

- NfL, GFAP, Tau
- Multiplex cytokines and chemokines
- IBA1 and CD68 (microglia)
- GFAP (astrocytes)
- NLRP3 inflammasome pathway analysis



### Functional Efficacy Assessment

Translate Biology into Meaningful Endpoints

- Behavioral and motor function
- Grip Strength Measurement

## From Molecule to Clinical Translation

An End to End PK/PD & Biomarker driven Approach



**Drug exposure**  
Plasma, CSF and Brain PK



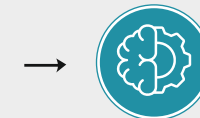
**Target engagement**  
Pathway Modulation



**Neuroinflammation modulation** - Microglia, cytokines and inflammasome signaling



**Biomarker response**  
NfL, GFAP, cytokines and cellular markers



**Functional improvement**  
Behavior and motor function



**Clinical translation**  
Better-informed development decisions

Clinically relevant models. Robust PK/PD integration.  
Translational biomarkers. Decision-ready data.



## The Clinical Value

Advance CNS Therapies with Greater Confidence

Integrated evidence across exposure, target engagement, biomarker modulation and functional efficacy.

Supporting Therapies Targeting

- Neuroinflammation
- Cognitive impairment
- Age-related CNS disorders

Comprehensive. Integrated. Translational.