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

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.

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.