



# NEUROPHARMACOLOGY

ChemPartner's extensive array of *in vitro* electrophysiological molecular biological technologies, the pharmacological data collected in brain slices, stable cell lines, cultured primary neurons, or explanted tissue samples have driven key target validation and hit-to-lead decisions on the therapeutic opportunities of test compounds. Additionally, our scientific experts conduct *in vivo* efficacy studies during lead optimization in *in vivo* rodent behavioral pharmacological or neurological disease models.

## IN VIVO MODELS

### NEUROPSYCHIATRIC

- Depression
  - Forced swim test: rats and mice
  - Tail suspension: mice
- Anxiety
  - Vogel conflict test: rats
  - Marble test: mice
  - Elevated plus maze: mice and rats
  - Sucrose preference
  - Stress-induced hyperthermia
- Sleep/Wake and Circadian Rhythm
  - Polysomnography
  - Spontaneous activity with vibration pattern recognition
- CNS Safety Pharmacology
  - sLMA
  - Modified Irwin
  - Pharmacology-EEG in rodents, dogs, and NHP

### EPILEPSY

- Chemically-induced Seizure
  - PTZ-induced: mice
  - LiCl- and pilocarpine-induced status epilepticus: rats
  - Kainate-induced MTLE with EEG monitor of SRS
- Electrically-induced Seizure
  - 6Hz electroshock-induced: mice
  - Maximal electroshock-induced (MES): mice
  - Maximal electroshock threshold (MEST): rodents
  - Amigdala kindling in rats (ADD and ADT)
- Dravet mice: hyperthermia epilepsy
- AY9944-induced Smith-Lemli-Opitz model (SLOS)

### RARE GENETIC DISEASE

- MLD, Twitcher, and Fabry mice

### NEURODEGENERATION

- Alzheimer's Disease - 5x familial AD transgenic mice
  - Biomarkers, pathology, EEG, behavioral tests, LTP in brain slice
- Parkinson's Disease - 6-OHDA rats
  - Apomorphine or L-DOPA challenged rotation
  - L-DOPA-induced dyskinesia in 6-OHDA rats
  - Reserpine-induced dyskinesia in rats
  - Harmaline-/tacrine-induced tremor in mice and rats
- Hearing Loss: noise-/chemical-induced
  - Inner ear local delivery and sampling
  - ABR tuning curve
  - Frequency mapping
- Ophthalmic Degeneration
  - Visible light-induced retinal damage with ERG
  - Optic nerve crush with NF-L reading
- Traumatic/Photothrombotic Brain Lesion

### PAIN

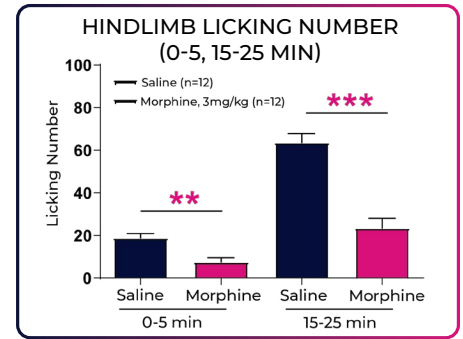
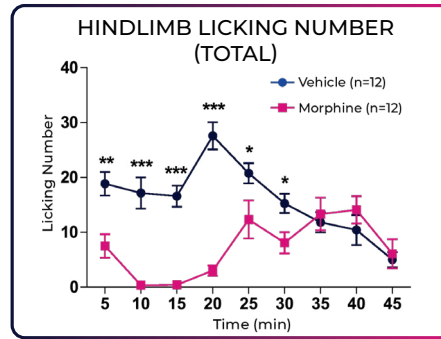
- Inflammatory Pain
  - CFA-induced: rats
  - Formalin-induced: rats and mice
- Visceral Pain
  - Acetic acid writhing: rodents
- Neuropathic Pain
  - CCI
  - STZ-induced diabetic neuropathy
  - Chemotherapy-induced neuropathy (Vincristine, Paclitaxel)
- Readouts
  - Von Frey, Randall-Selitto
  - Tail flick, hot/cold plate

## CASE STUDIES

### AUTOMATIC ANALYSIS OF SPONTANEOUS BEHAVIOR

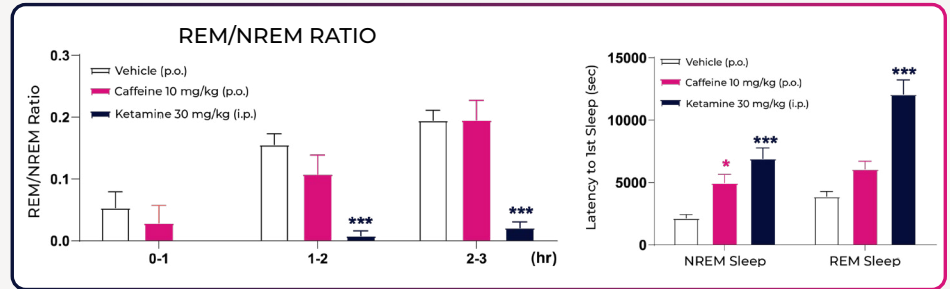
- Laboras recording of hindlimb licking in formalin-induced spontaneous pain model
  - Laboras vibration sensing platform
  - High throughput automatic recording
  - Multiple behavior scoring

MORE OBJECTIVE AND HIGHER QUALITY DATA VS. MANUAL OBSERVATION

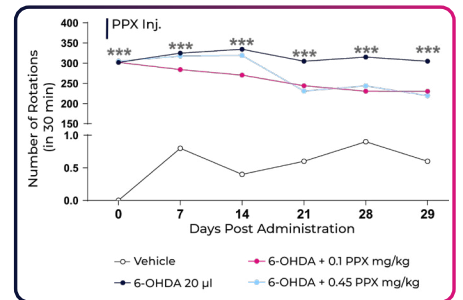
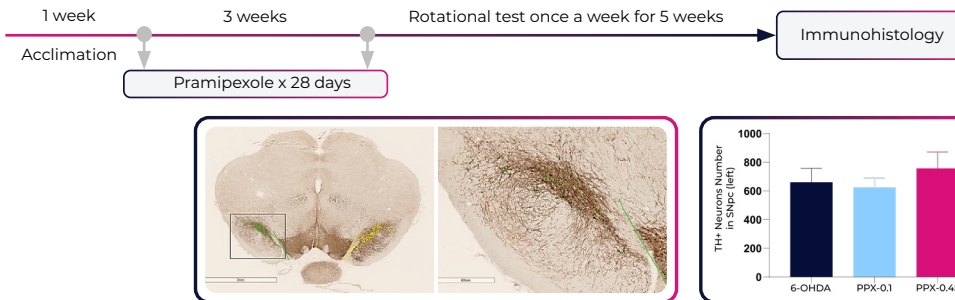


### EEG TELEMETRY (DSI SYSTEM/ SLEEPSIGN ANALYSIS)

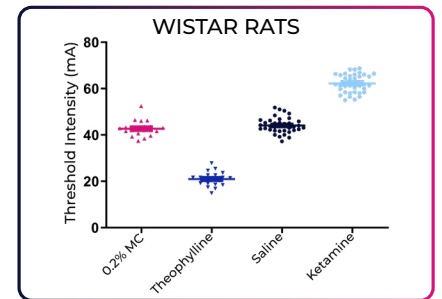
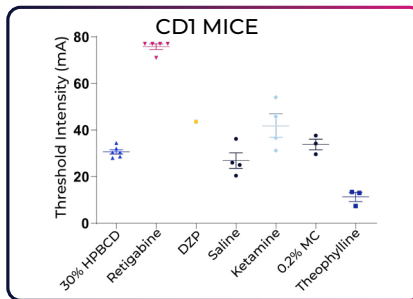
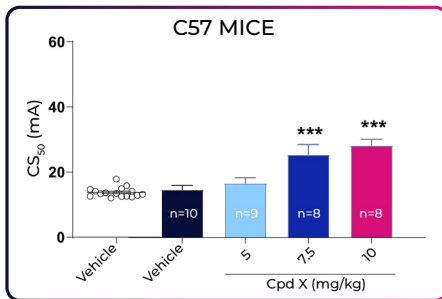
- DSI-telemetry system +
- SleepSign - qEEG, power analyses
- For sleep/wake studies and CNS safety/toxicity assessments



### 6-OHDA RAT MODEL OF PARKINSON'S



### MEST IN MICE AND RATS



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