CNS|CRO
Preclinical Neurological Disease Services

Autism Spectrum Disorder (ASD)
Comprehensive Behavioural Testing Battery

Model Overview

Human diagnosis of ASD relies on assessment of deficits in two primary areas - social communication and repetitive behaviours. CNSCRO's test battery combines specially selected behavioural tests with evaluations of rodent 'speech' in the ultrasonic spectrum (USVs), thus providing a highly relevant and sensitive paradigm for ASD animal model testing. In addition, many symptoms frequently found to be comorbid with ASDs are also readily identifiable and quantifiable, further enhancing the value of this test battery for assessment of potentially therapeutic ASD compounds. Individual tests may also be individually chosen from this test battery to provide assessments specific to a particular outcome.

Differentiation & Advantages

Provides a comprehensive assessment of communicative function in rodent models of ASD

Diagnosis of ASD in the human population is currently limited to assessment of behavioural symptoms, particularly those relating to social-communication skills and stereotypic behaviours.

> *Accurate symptomatic identification is imperative for evaluation of ASD therapeutics*

Validation

CNS|CRO's behavioural test battery provides ASD-relevant assessments of:

Basic social-communication skills:
- maternal-pup communications
- experimenter-pup communications
- peer communications (pup-pup)
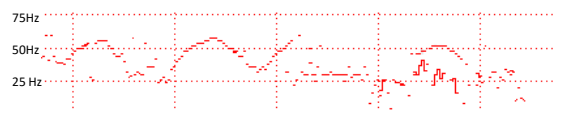- stranger communications (pup-pup)

Anxiety communications:
- novel "intruder" communications
- exploration anxiety communications
- isolation communications
- conflicted communications

Additional measures:
- neuromotor/neurosensory functions
- sociability/social preference
- cognitive processes
- activity levels
- basic developmental evaluation
- tactile sensitivities
- novelty seeking
- gating/startle/habituation
- repetitive activities/perseveration

Utilizes ultrasonic vocalization (USV) technology

75Hz
50Hz
25 Hz

USVs provide an indication of affective state in rodents

Mean duration of USVs (sec) during Open Field Testing

.100
.080
.060
.040
.020
.000

Saline
NaVPA

p=0.027

USV Duration