

Model Overview

CNS|CRO's unique rat model of schizophrenia is produced using non-invasive chemical manipulation during perinatal brain development. Slowly developing and progressive, the model provides a more accurate representation of the human condition, reliably displaying alterations in characteristic behavioural symptoms of schizophrenia, as well as underlying neuropathology.

Differentiation & Advantages

- neurodevelopmental, slowly developing, and progressive
- models the three categories of schizophrenia symptoms
- differences between males and females reflect diversity noted in the human condition
- neuropathology is consistent with that observed in clinical populations
- may be combined with other interventions to produce multi-hit models, providing even more versatility

Validation

Symptom Type	Human Symptoms	Animal Behavioural Correlate Tested
Positive	Hallucinations, delusions, racing thoughts	Psychomotor agitation (Burt et al., 2008)
Negative	Apathy, lack of emotion, poor or nonexistent social functioning	Social avoidance (Ryan et al., 2011)
Cognitive	Disorganized thoughts, difficulty concentrating and/or following instructions, difficulty completing tasks, memory problems	Maze paradigms / prepulse inhibition / latent inhibition (e.g. Marriott et al., 2012)

Testing may be performed at multiple time points throughout development

Model-specific testing paradigms include:

Sensory/Attentional processing – Prepulse inhibition; Latent inhibition tests

Altered emotionality – Elevated plus; Light/Dark box

Learning/Memory – Watermaze; RAM; t-maze

Social behaviours – 3 chamber; Dyadic interactions; Aggression

Reward seeking – Conditioned place preference; Sucrose consumption

Novelty seeking – Conditioned place preference; Playground maze; Novel object recognition

Psychomotor agitation – Amphetamine-induced locomotion; Open field



Prepulse Inhibition Test Chamber