Rat Model of Schizophrenia for Research and Preclinical Study

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing the first animal model of schizophrenia that features a true germline knockout of *Disc1*, a gene known to play a significant role in the disease process.

Overview

Schizophrenia is a complex neuropsychiatric disease afflicting up to 1 percent of the worldwide population. It affects perception, behavior and thinking and can have devastating social ramifications. Despite recent advances in brain imaging, the biochemical and genetic features of schizophrenia remain frustratingly opaque.

One problem is that the field lacks a true animal model of schizophrenia that fully recapitulates the genetic features of the disease. Human postmortem studies, while insightful, are confounded by treatment change, drug intervention and environmental influences, all of which likely contribute to the inconsistencies reported in the literature.

The Invention

UW–Madison researchers have used a CRISPR/Cas9 approach to create several animal lines with deletions in exons 2/3 of *Disc1*, which has been identified as a significant candidate susceptibility gene in schizophrenia. Therefore the new model provides an exciting opportunity to explore the impact of this well-known *de novo* genetic variant on the structural and developmental features of the disease.

Applications

- Useful as a research tool or ultimately for preclinical therapeutic studies
- May be used and distributed as a biomaterial

Key Benefits

- First ever animal model of its kind
- Rats are a better model for neuropsychiatric disease than mice given their behavioral range.

Stage of Development

All of the knockdown variants are alive and none express *Disc1*. The researchers plan to test the behavioral and molecular traits of the new model and have established collaborations on campus to facilitate studies under various conditions.

Additional Information

For More Information About the Inventors

- John-Paul Yu

Tech Fields

- Research Tools : Animal & disease models

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854