Advancing Treatment for Schizophrenia (Carmel)

Researcher : Dr. Inna Gaisler-Salomon

Background

Schizophrenia is a severe mental disorder that is characterized by debilitating symptoms of impaired perception, cognition, speech, affect and behavior. According to the National Institute of Mental Health (NIMH), the prevalence of schizophrenia is approximately 1.1% of the population over the age of 18. This means that as many as 51 million people worldwide suffer from schizophrenia today.

Despite its prevalence, the etiology of this disorder remains largely unclear, and therefore effective long-term cures or prevention have not yet been discovered. Existing medication prescribed for people with schizophrenia has significant side effects and can only treat some of the symptoms.

Novel Animal Models and Targets for Pharmaceutical Testing

Research conducted by Dr. Inna Gaisler-Salomon, head of the Molecular Basis for Psychopathology Lab in the University of Haifa's Department of Psychology, aims at developing animal models using a combination of genetic, molecular and behavior tools to address questions related to the etiology, symptomatology and treatment of schizophrenia.

Glutamate abnormalities have been extensively reported in schizophrenia, but the precise nature and directionality of these abnormalities has remained unresolved. Along with her research team, Dr. Gaisler-Salomon is focusing research on glutamate synthesis and transmission using novel animal models that they are developing, and enabling the discovery of targets for developing novel drugs to treat schizophrenia.

Research Status

The research team examines mice that are genetically modified to express abnormal levels of proteins involved in glutamate metabolism, observing not only the effects of these manipulations on susceptibility, but also on resilience to schizophrenia.

Using genetic and molecular techniques (genetically modified mice, viral-induced manipulations, chemogenetics), the researchers are able to manipulate glutamate levels in a spatially and temporally limited manner. Baseline and drug-induced behavioral flexibility and attentional cognitive shifting is then tested using novel behavioral assays developed and optimized in the Gaisler-Salomon Lab. Their findings are leading to a better understanding of schizophrenia etiology and are likely to present new treatment venues for its symptoms.

Contact us for further information.

Related pages

Inna Gaisler- Salomon, Dr. - Researcher page

The Molecular Basis for Psychopathology Lab

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