**Docket #:** S10-338

# Targets for antipsychotic interventions

Researchers in Prof. Karl Deisseroth's laboratory have identified a unifying endophenotype for psychosis that could be used to develop antipsychotic treatments. Using psychotomimetic drugs and/or optogenetic stimulation to model aspects of psychosis in mice, the inventors found that bistability in defined subsets of prefrontal cortical neurons, mediated in part by voltage-gated calcium channels is a common pathway to psychotic symptoms. Moreover, they found that L-type calcium channel antagonism can correct psychotic symptoms. This technology has applications in basic research, screening for anti-psychotic agents, and treatment of conditions such as schizophrenia.

**Related Optogenetics Inventions**
The Deisseroth Laboratory has developed a wide variety of optogenetics tools, including opsin genes, medical devices, animal models, and screens. Additional information on these technologies can be found by clicking on the “more technologies from Karl Deisseroth” link below.

## Applications

- **Research** - using the endophenotype for studies of psychotic conditions
- **Screening** - using L-type calcium channels and/or bistability to identify novel antipsychotic or prosocial treatments
- **Therapeutic** - treatment of psychosis-related conditions with voltage gated calcium channel anatagonists

## Advantages

- **Specific** - endophenotype is a powerful and predictive final common pathway for psychosis and antipsychotic action

## Patents

- Published Application: 20140082758
- Published Application: 20160316732
- Published Application: 20210059230

## Innovators

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