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Animal Model of Social Dysfunction

Researchers in Prof. Karl Deisseroth's laboratory have used optogenetic tools to develop an animal model for social dysfunction by precisely targeting defined neural circuit elements. The inventors have used this approach to generate rodents that can be made to instantaneously transition into and out of a symptomatic state by elevating cellular excitation-inhibition balance within neocortical microcircuitry. Behavioral changes in these mice are relevant to autism, schizophrenia and other disorders. The mice and the targets identified with them could be used for research and therapeutic development.

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 tool** - platform for studying social dysfunction in conditions such as autism and schizophrenia (to identify phenotypes, endophenotypes and treatment targets)
- **Screening** - to identify new targets and treatments for psychotic conditions

Advantages

- **Precise control of behavior**
- **Less laborious, less expensive, and less variable** than current models

Patents

- Published Application: 20130347137
- Published Application: 20160316730

Innovators

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