Docket #: S07-001

Neurophysiological Correlates of Psychiatric and Therapeutic Responses

Researchers in Dr. Karl Deisseroth's laboratory have developed a novel method to rapidly identify neurophysiological measures associated with psychiatric disease and then use those correlates to screen for therapeutics. This technology utilizes modern animal behavioral models, high-speed imaging techniques, and corresponding analysis methods to discover neural activity changes. Initial studies have focused on hippocampal metrics related to depression. However, these tools can be used for studying a variety of psychiatric disorders and subsequent screening of therapeutics for those conditions.

Stage of Research:
The inventors have used voltage sensitive dye imaging (VSDI) to identify neurophysiological correlates in several rodent models of depression. They have also demonstrated the generality of the findings to multiple classes of antidepressants and the successful treatment of a depressed-like state.

Applications

- **Drug screening** - for psychiatric therapeutics
- **Research** - basic tools for elucidating neural physiology underlying psychiatric conditions

Advantages

- **Novel modality** for identification of neurophysiological correlates of psychiatric disease and screening of therapeutics for these diseases.

Publications

- US Patent Application: 12/031,651
- Raag D. Airan, Leslie A. Meltzer, Madhuri Roy, Yuqing Gong, Han Chen, and Karl Deisseroth: "High-Speed Imaging Reveals Neurophysiological Links to Behavior in an Animal Model of Depression" *Science* 10 August 2007 317: 819-823

Patents

- Published Application: 20080227139
- Published Application: 20180020921
- Issued: 8,401,609 (USA)
- Issued: 9,693,692 (USA)

Innovators

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