Transcription Factor Treatment for Schizophrenia and Bipolar Disorder

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INVENTORS

- Vawter, Marquis P.

OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Diagnostics
  - Gene Therapy
  - Therapeutics

RELATED CASES

2018-522-0

BRIEF DESCRIPTION

Current time to diagnosis for Schizophrenia and Bipolar Disorder is extremely lengthy (~6 months), and a delay in treatment greatly increases risk for suicidal thoughts. Once diagnosis has occurred, therapeutic options for both mental illnesses are greatly varied and have numerous side effects. To address both issues, UCI researchers have developed a novel way to diagnose and treat Schizophrenia and Bipolar Disorder by targeting specific transcription factors.

SUGGESTED USES

·Diagnostic for Schizophrenia and Bipolar Disorder

·Single agent or combination therapy for Schizophrenia and Bipolar Disorder

FEATURES/BENEFITS

Rapid diagnosis, in particular compared to current methods which can take 6 months

TECHNOLOGY DESCRIPTION

Schizophrenia and Bipolar Disorder are two prominent mental illnesses, affecting 3.2 million and 5.7 million Americans respectively. Symptoms for both illnesses vary from patient to patient but those diagnosed with schizophrenia can display delusions, hallucinations, and negative symptoms (lacking emotion), symptoms which often get worse with time. Those with Bipolar Disorder typically will have extreme manic and depressive episodes. Diagnosis can take a long time due to the need for an extensive psychological assessment. Schizophrenia and manic episodes of Bipolar Disorder are commonly treated with antipsychotics, which often have side effects such as tardive dyskinesia. Researchers at UCI have developed novel diagnostic and therapeutic target of common transcription factors, which have not previously been associated with psychiatric disorders, whose targets are differentially regulated in Schizophrenia and Bipolar Disorder. Specifically, genes regulated by proto-oncogene, are upregulated in Bipolar Disorder and decreased in Schizophrenia. Measuring and manipulating these transcription factors will allow rapid diagnosis and better management of these diseases' hallmark hallucinations, delusions, and mania.

STATE OF DEVELOPMENT

The diagnostic capabilities of an 18-gene biomarker panel have been verified as accurate and specific through prediction of diagnosis using patient samples. Blood samples from 90 patients (30 each of Schizophrenia, Bipolar Disorder, and Normal Control) over two visits were tested, with over 1.4 million probesets. Identification of the three groups were predicted with 83-88% accuracy.

RELATED MATERIALS

- » Vawter, M.P., et. al. "Exon Array Biomarkers for the Differential Diagnosis of Schizophrenia and Bipolar Disorder", Molec. Neuropsych. 2017, 3, 197 - 05/01/2018
- » Ryu E., et al. "A Genome-Wide Search for Bipolar Disorder Risk Loci Modified by Mitochonrdial Geneome Variation", Molec Neuropsych 2018 3, 3. - 10/28/2017

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