AUTOMATED SELECTION OF GENES FOR TRANSLATIONAL RESEARCH ON COMORBIDITY OR BIPOLAR DISORDER WITH SUBSTANCE ABUSE

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Abstract: Bipolar Disorder is a highly heritable mental illness. The global burden of bipolar disorder is complicated by its comorbidity with substance abuse. Several genome-wide linkage/association studies on Bipolar Disorder as well as Substance Abuse have focused on the identification and/or prioritization of candidate disease genes. A useful step for translational research of these identified/prioritized genes is to identify sets of genes that have particular kinds of publicly available data. Therefore, we have leveraged the availability of links to related resources in the Entrez Gene database to develop a web-based resource for selecting genes based on presence or absence in particular biological data resources. The utility of our approach is demonstrated using a set of 3,399 genes from multiple eukaryotes that have been studied in the context of Bipolar Disorder and/or Substance Abuse. A web resource to automate the selection of genes that contain database links is available at http://compbio.jsums.edu/bpd. A future development goal of the resource is to facilitate systems biology analyses by linking query outputs to the Michigan Molecular Interactions (MiMI) resource.

Keywords: Bipolar Disorder, mental illness, comorbidity, substance abuse, automate, genes, MiMI.

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