FINDING CANDIDATE GENES FOR DEVELOPMENTAL DYSLEXIA

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BACKGROUND

Developmental Dyslexia is a learning disability that involves difficulty in reading, spelling, writing, and arithmetic processing of words. It is one of the most common neurodevelopmental disorders affecting up to 10-15% of people. It is thought to be caused by dysfunctions in the frontal, parietal, and cerebellar areas. Dyslexia is a heterogeneous disorder, with symptoms varying in severity and type. Symptoms include reading and writing difficulties, poor memory, impulsivity, and inattentiveness. The frontal cortex is often cited as playing a key role in dyslexia. Dyslexic patients are found to have abnormal blood flow and metabolism in the frontal cortex, compared to normal individuals. Dyslexic children are also more likely to have anomalies in the structure and development of the parietal cortex, cerebellum, and basal ganglia.

METHODS

To prove Developmental Dyslexia susceptibility genes that were obtained from the Allen Brain Atlas, we used GeneWeaver (Allen Genome DB, http://gene.w.w) (2017 on nature.com), to search for genes of interest. We found that any of the genes of interest were participants in pathways relating to Dyslexia. Moreover, we found that some genes of interest were also associated with other diseases such as schizophrenia, autism, and Alzheimer’s disease. This suggests that these genes may play a role in the development of these disorders.

RESULTS

1. IDENTIFYING GENES OF INTEREST: PROTEIN INTERACTION NETWORKS

The protein interaction networks of the Allen Brain Atlas were used to find heatmaps of several brains donated to the Allen Brain Atlas. The Allen Brain Atlas is a database used for storing gene expression data from the human brain. The Allen Brain Atlas contains heatmaps of gene expression in different brain regions, including the cortex, cerebellum, and other brain regions. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions.

2. IDENTIFYING TOP GENES OF INTEREST: GENE FUNCTIONS

We used the Gene Ontology classification of genes to identify genes of interest that have been implicated in the development of dyslexia. The Gene Ontology classification is a controlled vocabulary of terms that describe biological processes, cellular components, and molecular functions. The Allen Brain Atlas contains gene ontology classifications for genes of interest that have been implicated in the development of dyslexia. These genes are associated with different brain regions and have been implicated in the development of dyslexia.

3. GENE EXPRESSION PROFILE

Using the data obtained from the Allen Brain Atlas, we found that there is a high likelihood that it is related to dyslexia. The expression patterns of genes such as SLIT2, CTNNB1, and CALM2 indicate that they are commonly associated with one or another or that they frequently work together to perform a similar function. GRIN1, DLG4, and CALM2 were found to have a high gene expression in the cerebral cortex. The Allen Brain Atlas contains heatmaps of gene expression in different brain regions, including the cortex, cerebellum, and other brain regions. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions.

4. ANALYZING GENE EXPRESSION IN REGIONS OF THE CEREBRAL CORTEX

The Allen Brain Atlas contains heatmaps of gene expression in different brain regions, including the cortex, cerebellum, and other brain regions. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions. The Allen Brain Atlas contains heatmaps of gene expression in different brain regions, including the cortex, cerebellum, and other brain regions. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions.

5. EVIDENCE OF INTERACTIONS BETWEEN THE GENES OF INTEREST

We found evidence of interactions between the genes of interest, such as SLIT2, CTNNB1, and CALM2. These genes are associated with different brain regions and have been implicated in the development of dyslexia. The Allen Brain Atlas contains heatmaps of gene expression in different brain regions, including the cortex, cerebellum, and other brain regions. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions.

6. FINDING CORRELATES

Genes such as SLIT2, CTNNB1, and CALM2 were found to be associated with dyslexia in the Allen Brain Atlas. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions. The Allen Brain Atlas contains heatmaps of gene expression in different brain regions, including the cortex, cerebellum, and other brain regions. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions.

CONCLUSION

Dyslexia is a complex disorder that involves the interaction of multiple genes. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions. The Allen Brain Atlas contains heatmaps of gene expression in different brain regions, including the cortex, cerebellum, and other brain regions. The Allen Brain Atlas is a valuable resource for studying the expression patterns of genes in different brain regions.

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