

Gene-chromosome locations of neuropsychiatric diseases

Paul Shapshak^{1,2} *, Charurut Somboonwit^{1,3}, John Sinnott^{1,3}, Deborah Commins^{4, 5}, Elyse Singer^{5,6}, & Andrew Levine^{5,6}

¹Division of Infectious Disease and International Medicine, Tampa General Hospital, USF Health, Tampa, FL 33601; ²Department of Psychiatry & Behavioral Medicine, University of South Florida, College of Medicine, Tampa, FL 33613; ³Clinical Research Unit, Hillsborough Health Department, Tampa, FL 33602; ⁴Department of Pathology, USC Keck School of Medicine, Los Angeles, CA 90089; ⁵National Neurological AIDS Bank, UCLA Geffen School of Medicine, Westwood, CA 90095; ⁶Department of Neurology, UCLA Geffen School of Medicine, Westwood, CA 90095; Paul Shapshak – Email: pshapshak@gmail.com; phone: 843-754-0702; Fax: 813-844-8013; *Corresponding author

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Abstract:

A number of genes are involved in various neuropsychiatric disorders. A comprehensive compilation of these genes is important for a better understanding of these diseases. We report an online file that lists genes by chromosome number and location. This is useful for the rapid examination of chromosome bands for genes involved in these diseases. This is not an exhaustive list and does not include single nucleotide polymorphism (SNP) results for genes that are currently being examined by genome wide association studies (GWAS) and other molecular methodologies.

Background:

It is often of interest for the researcher to ascertain rapidly the location of genes on various human chromosomes. We present a table of genes involved in various neuropsychiatric diseases [1, 2] listed by chromosome number and banding. There is no selection of specific disease category. It should be noted that many diseases (e.g. deafness, Parkinson's disease, epilepsy, etc.) appear at many bands among the chromosomes. Similarly, many bands harbor more than one disease.

Methodology:

Public databases of genes related to chromosome locations were examined [3-6] Results were tabulated by human chromosome and banding as given in the excel dataset (**Please see available URL to download**). The gene functions

are described in detail in the databases. The information relating to gene locations for neuropsychiatric diseases is readily accessible on these web-sites. The numbers of sites and diseases on each chromosome arm are shown in **Table 1 (supplementary material)**.

Future developments:

The purpose here is to present the chromosome and band locations for genes involved in neuropsychiatric diseases. Several bands are associated with more than one neuropsychiatric disease and will be investigated in future studies. This list does not include genes that currently discovered by recent GWAS and other molecular methodologies. Future reviews of the literature and web sites will examine in detail the large number of newly identified genes with their SNP locations and pathways that

are involved in these and additional neuropsychiatric diseases.

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References:

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- [2] Sadock BJ *et al.*, Comprehensive Text book of Psychiatry, Walters-Kluwer-Lippincott Publ. 9th ed. 2009 ISBN: 978-0-7817-6899-3
- [3] <http://www.ncbi.nlm.nih.gov/ncbisearch>
- [4] <http://www.ncbi.nlm.nih.gov/omim>
- [5] <http://www.genecards.org/>
- [6] <http://www.ncbi.nlm.nih.gov/pubmed/20959295>

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Supplementary material:

Table 1: Numbers of sites and diseases on each chromosome.

Chromosome number and arm	Number of diseases/locations
1p	30
1q	28
2p	14
2q	25
3p	11
3q	12
4p	10
4q	15
5p	5
5q	18
6p	20
6q	18
7p	3
7q	17
8p	7
8q	14
9p	5
9q	14
10p	4
10q	17
11p	13
11q	12
12p	5
12q	14
13p	-
13q	20
14p	-
14q	18
15p	-
15q	19
16p	13
16q	3
17p	8
17q	22
18p	5
18q	3
19p	14
19q	13
20p	9
20q	4
21p	-
21q	6
22p	-
22q	18
Xp	6
Xq	18

(- = no information)