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Choose a disease of your interest and investigate about it using BOTH Open Targets and HumanMine platforms.

Write what you have learned about it and upload a report here (max 4-5 pages, you can include screenshots).

You can do this in groups of 2-3, but everyone needs to submit their own report. If you decide to do it in groups please include the names of all the group members at the beginning of the report.

SCHIZOPHRENIA

Genetic association:

There is low genetic association overall, but the highest associations scores are using open target genetics and UniProt Literature

Somatic mutations:

There are no somatic mutations on any target

Drugs:

ChEMBL has a very high score in most targets

Affected pathways:

No targets are affected by pathway analysis

The RNA expression and animal models have almost no target score, the animal models having a little higher score.

Associated targets:

First of all, we can observe it has around 5774 different entries. It has a really high overall association score, with at least 500 entries with a high score.

It has no somatic mutations, also no pathways and systems biology. And it has a really poor RNA expression, with almost no entries, and the ones there have really low scores.

It is important to remark that it has lots of drugs associated with it, and almost all of them with the maximum score possible.

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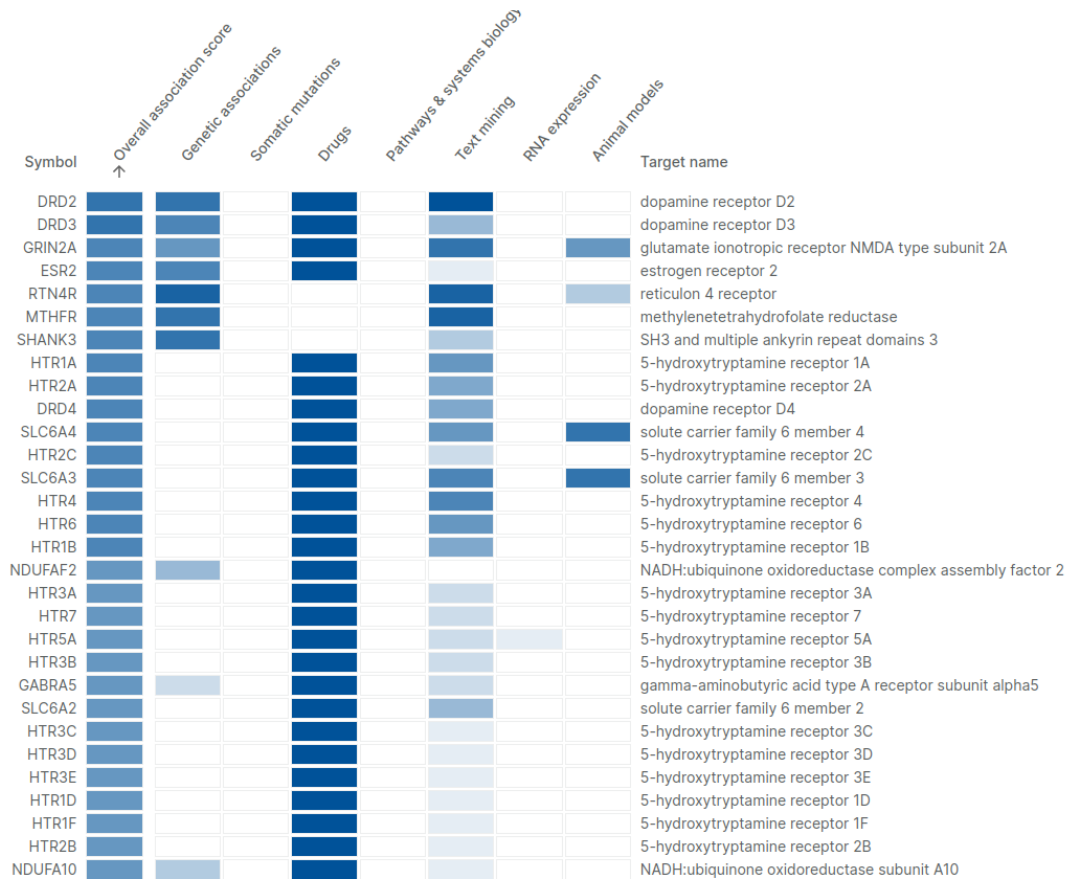

Profile:

These are known drugs that affect schizophrenia through different mechanisms

Disease information	Drug information				Target information	C
Disease	Drug	Type	Mechanism Of Action	Action Type	Symbol	N
schizophrenia	ACAMPROSATE	Small molecule	Glutamate [NMDA] receptor antagonist	Antagonist	GRIN2C	g
schizophrenia	CHLORPROMAZINE	Small molecule	D2-like dopamine receptor antagonist	Antagonist	DRD4	d
schizophrenia	AMISULPRIDE	Small molecule	Serotonin (5-HT) receptor antagonist	Antagonist	HTR1B	5
schizophrenia	KETAMINE	Small molecule	Glutamate [NMDA] receptor negative allosteric modulator	Negative allosteric modulator	GRIN2A	g
schizophrenia	METFORMIN	Small molecule	Mitochondrial complex I (NADH dehydrogenase) inhibitor	Inhibitor	MT-ND6	m
schizophrenia	AMISULPRIDE	Small molecule	Serotonin (5-HT) receptor antagonist	Antagonist	HTR3D	5
schizophrenia	CHLORPROMAZINE	Small molecule	D2-like dopamine receptor antagonist	Antagonist	DRD3	d
schizophrenia	METFORMIN	Small molecule	Mitochondrial complex I (NADH dehydrogenase) inhibitor	Inhibitor	MT-ND4	m
schizophrenia	ZIPRASIDONE	Small molecule	Serotonin 2c (5-HT2c) receptor antagonist	Antagonist	HTR2C	5
schizophrenia	AMISULPRIDE	Small molecule	Serotonin (5-HT) receptor antagonist	Antagonist	HTR2A	5

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We can look at each target and its relations individually

For example for the gene of dopamine receptor D2 (DRD2) Open Target can associate 758 diseases or phenotypes:

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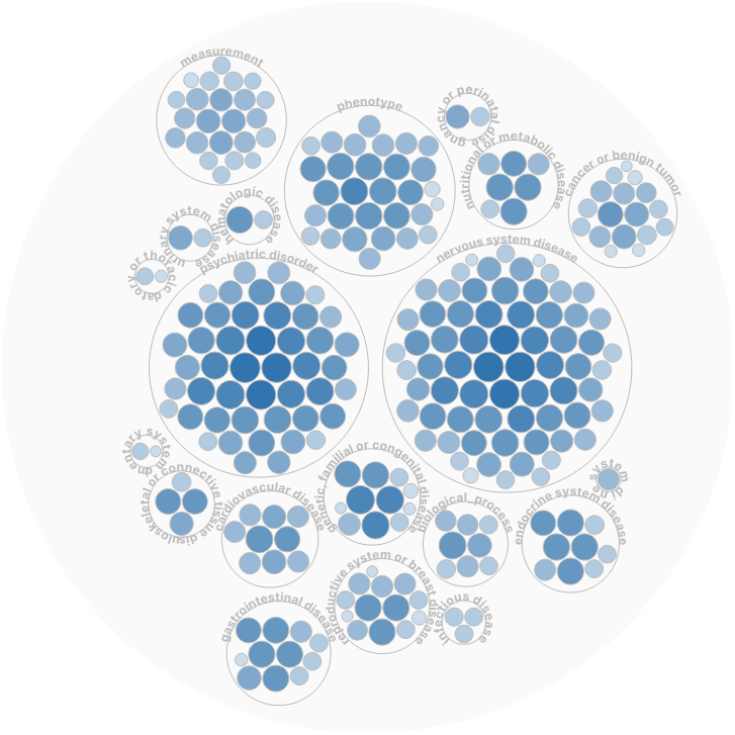
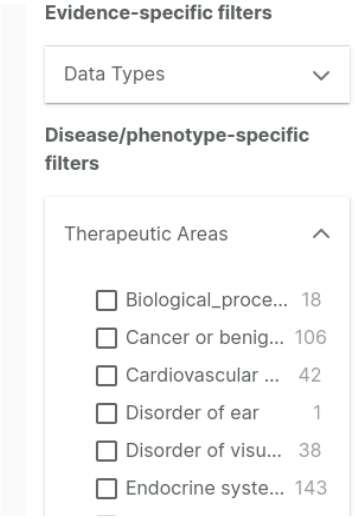


We can even filter the associations to this gene by evidence, disease and therapeutic areas



In the HumanMine platform we can see alleles related to the disease, for example:

Alleles (77)

Showing 1 to 5 of 77 rows | OPTIONS | Rows per page: 5 | Page 1

Alleles Primary Identifier	Organism Name
1320988	Homo sapiens
153362	Homo sapiens
207488	Homo sapiens
226431	Homo sapiens
226432	Homo sapiens

We can also see datasets that present information about this disease, like OMIM-diseases, clinvar and hpo-annotation

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Data Sets (3)

Showing 1 to 3 of 3 rows | OPTIONS | Rows per page: All (3) | Page 1

Data Sets Name	Data Sets URL	Data Source Name
OMIM diseases	NO VALUE	OMIM
clinvar	https://www.ncbi.nlm.nih.gov/clinvar/	NCBI
hpo-annotation	NO VALUE	Human Phenotype Ontology

This website also shows us genes related to this database

Genes (11)

Showing 1 to 11 of 11 rows | OPTIONS | Rows per page: All (11) | Page 1

Genes Symbol	Genes Name	Genes Primary Identifier	Genes Secondary Identifier	Genes Length	Organism Name
APOL2	apolipoprotein L2	23780	ENSG00000128335	13746	Homo sapiens
APOL4	apolipoprotein L4	80832	ENSG00000100336	15706	Homo sapiens
CHI3L1	chitinase 3 like 1	1116	ENSG00000133048	7774	Homo sapiens
COMT	catechol-O-methyltransferase	1312	ENSG00000093010	28204	Homo sapiens
DAOA	D-amino acid oxidase activator	267012	ENSG00000182346	25168	Homo sapiens
DISC2	disrupted in schizophrenia 2	27184	NO VALUE	3892	Homo sapiens
DRD3	dopamine receptor D3	1814	ENSG00000151577	71828	Homo sapiens
HTR2A	5-hydroxytryptamine receptor 2A	3356	ENSG00000102468	66537	Homo sapiens
MTHFR	methylenetetrahydrofolate reductase	4524	ENSG00000177000	20381	Homo sapiens
RTN4R	reticulon 4 receptor	65078	ENSG00000040608	26904	Homo sapiens
SYN2	synapsin II	6854	ENSG00000157152	187667	Homo sapiens