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Psychedelics Genetic Test From [Halugen.com](https://halugen.com)

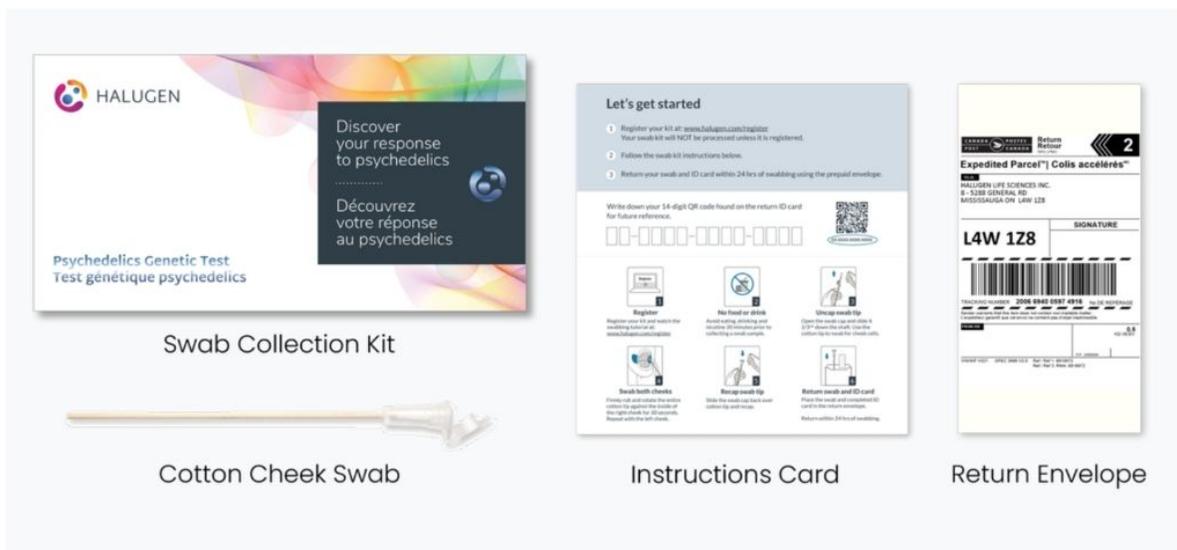
Contents:

1. Genetic test kit - images and descriptions
2. Genes tested - descriptions in lay terms
3. How it works - overview
4. Your HaluGen.com dashboard
5. Sample reports - genetics
6. Surveys
7. Research papers
8. Website copy for your promo efforts



1. Psychedelics Genetic Test | Retail Price \$89.00

- What's currently in the kit
 - Swab Kit
 - Pre-paid shipping envelope
 - Instructions on how to swab and register your sample with our private lab, located in Toronto, Canada



2. Genes Tested

We have selected five genes that have been found through peer-reviewed research to influence your body's reaction to psychedelics or increase the risk of adverse mental health effects.

Once your sample is processed, you will receive a report on each gene that includes your genotype and actionable insights.

HTR2A | Psychedelic Sensitivity

- Influences the baseline expression of the 5-HTR2A serotonin receptor, activated by serotonin and psychedelic drugs, including psilocybin, LSD, and DMT.
 - Approximately 20% of people carry an HTR2A genetic variant which can increase serotonin receptor density, potentially making them more susceptible to stronger hallucinogenic effects experienced with classic psychedelic drugs.
 - Studies have shown that individuals with reduced serotonin receptor density (HTR2A C/C genotype) are more prone to adverse drug reactions (ADRs) when taking Selective Serotonin Reuptake Inhibitors (SSRIs), a common treatment for depression and anxiety.

CYP2B6 | Ketamine Metabolism

- Encodes a liver enzyme that helps metabolize ketamine in your bloodstream.
 - 10–20% of people carry the CYP2B6*6 genetic variant, which causes them to metabolize ketamine up to 2x to 3x slower than normal.

C4A | Mental Health

- Having an increased number of C4A gene copies (4 or 5) causes more C4A protein expression responsible for synaptic pruning.
 - A variant of C4A causes increased disorderly synaptic pruning, contributing to a higher risk of mental health disorders such as psychosis, bipolar, and schizophrenia.

NRG1 | Mental Health

- Expresses proteins that play an essential role in synaptic plasticity of the brain, which influences short-term learning and long-term memory.
 - A variant of NRG1 has been linked as a risk factor for mental health disorders such as psychosis, bipolar, and schizophrenia.

DISC1 | Mental Health

- Expresses DISC1 proteins that are involved in important processes that regulate the nervous system and brain development.
 - A variant of DISC1 has been shown to increase the risk for mental health disorders such as psychosis, bipolar, and schizophrenia.

3. [How it works](#)

A few simple steps to follow at home

1 Register your kit



Your swab kit will arrive at your doorstep.
Register your swab kit at:
www.halugen.com/register

2 Swab and return



Swab your cheek and return in the prepaid shipping envelope. View the [swab kit instructions](#).

3 Discover and explore

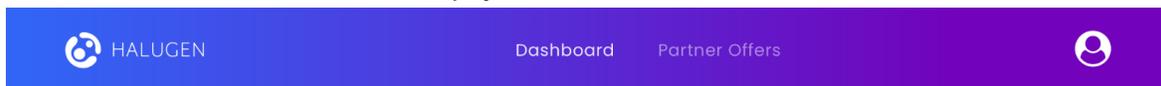


Discover and explore personalized reports and actionable insights from your psychedelics genetic profile.

- Your sample will ship back to our lab in Toronto, Canada, for processing. Results are typically processed within a few days of arrival.
- You'll receive an email when your results are ready. You can access them through the link in the email or by logging [into your HaluGen.com account](#), where you will see your dashboard.

4. Your HaluGen Dashboard

- Your Profile - a snapshot of what you have completed within your account
- Genetics - view the reports of your genetic test results
- Surveys - additional information you can complete to share with your licensed health care practitioner
- Research Papers - access the scientific research papers used to validate the genes tested and their connection to psychedelics



Psychedelics Dashboard

Overview Genetic Reports Surveys Research Papers

Your Profile

Demo Jane

1/1 Test Kits 5/5 DNA Markers 0/5 Surveys

[Kit Registered](#) [Swab Tutorial](#)

Genetics

Psychedelics DNA Markers

Your psychedelics test kit comes with DNA markers for sensitivity, metabolism and mental health risk.

[View Reports](#)

Surveys

Psychedelics Assessment

Suitability assessment for psychedelics including mental health, family history and lifestyle factors.

[View Surveys](#)

Research Papers

Psychedelics Science

Psychedelics-related research papers including a HaluGen genetics pre-screening white paper.

[View Papers](#)

Dashboard

[Overview](#)
[Genetic Reports](#)
[Surveys](#)
[Research Papers](#)

Quick Links

[Genetics Report](#)
[Surveys Report](#)
[White Paper](#)

HaluGen Life Sciences Inc.

Our mission is to help people make informed choices around psychedelic assisted therapy through personalization with genetics, data and engagement.



5. Sample Reports

HTR2A | Psychedelic Sensitivity

cs Dashboard

Psychedelics Sensitivity Report

HTR2A Serotonin Gene

The way your body responds to classical psychedelics such as psilocybin, LSD and DMT, is influenced by the HTR2A gene. This gene influences the baseline expression of the 5-HTR2A serotonin receptor, which is activated by both serotonin and psychedelic drugs. This binding activation releases neurotransmitters in the brain which can induce potential hallucinations and other mental effects or "trips".

Genotype Result

HTR2A C/T

What do my results mean?

Approximately 20% of people carry an HTR2A genetic variant which can increase serotonin receptor density, potentially making them more susceptible to stronger hallucinogenic effects. These individuals should be more cautious when considering classical psychedelic therapies.

Psychedelics Sensitivity

Normal

How do I compare?

HTR2A Genotype	HTR2A Serotonin Receptors
C/C	Reduced
C/T	Normal
T/T	Increased

Caucasians

Reduced (34%)
Normal (47%)
Increased (18%)

East Asians

Reduced (23%)
Normal (54%)
Increased (23%)

Indians

Reduced (22%)
Normal (54%)
Increased (24%)

How do I respond to SSRIs?

Selective Serotonin Reuptake Inhibitors (SSRIs) are a common treatment for depression and anxiety. They are thought to increase serotonin levels in the brain by blocking the reabsorption ("reuptake") of serotonin. Studies have shown that individuals with reduced serotonin receptor density (HTR2A C/C genotype) are more prone to adverse drug reactions (ADRs) when taking SSRIs.

SSRI Sensitivity

Normal

Done

CYP2B6 | Ketamine Metabolism

ics Dashboard

Ketamine Metabolism Report

CYP2B6 Metabolism Gene

The way your body metabolizes ketamine, a fast-acting anesthetic with hallucinogenic properties, is influenced by the CYP2B6 gene. This gene encodes a liver enzyme that helps metabolize ketamine in your bloodstream. 10–20% of people carry the CYP2B6*6 genetic variant which causes them to metabolize ketamine up to 2x to 3x slower than normal.

Genotype Result

CYP2B6 *1/*1

What do my results mean?

'Slow metabolizers' should be more cautious when being dosed with ketamine, as they will likely experience an increased duration and intensity of effect, especially when taking ketamine in intravenous or subcutaneous form.

Ketamine Metabolism

Normal

How do I compare?

CYP2B6 Genotype	CYP2B6 Metabolizer Status
*1/*1	Normal
*1/*6	Slow
*6/*6	Very Slow

Caucasians

Normal (32%)
Slow (46%)
Very Slow (22%)

Africans

Normal (32%)
Slow (46%)
Very Slow (22%)

East Asians

Normal (46%)
Slow (41%)
Very Slow (13%)

How do I respond to different formats?

Studies have shown that individuals with slower ketamine metabolism are more prone to adverse drug reactions (ADRs) such as drowsiness, hallucinations, dizziness and confusion. Oral doses of ketamine are not as affected by the CYP2B6 metabolism gene.

Oral

Normal

Intravenous/Subcutaneous

Normal

Done

Mental Health Risk Report

C4A Gene Copy Number Variation

The C4A gene expresses a protein that is responsible for synaptic pruning in the brain. This is a normal process by which extra synapses, starting in childhood and adolescence, are eliminated to make way for more complex synapses in adulthood. An individual can have different C4A gene copy number variations (CNV), typically from 0 to 5 copies.

CNV Result
2 copies

What do my results mean?

Having an increased number of C4A gene copies (4 or 5) causes more C4A protein expression that is responsible for synaptic pruning. It is believed that increased disorderly synaptic pruning can be a contributing factor to a higher risk of mental health disorders such as psychosis, bipolar and schizophrenia.

Risk
Normal

How do I compare?

C4A CNV	Mental Health Risk
0-1	Normal
2-3	Normal
4-5	Increased

Caucasians



- 0-1 Copies (22%)
- 2-3 Copies (75%)
- 4-5 Copies (3%)

East Asians



- 0-1 Copies (7%)
- 2-3 Copies (89%)
- 4-5 Copies (4%)

[View Report](#) [Done](#)

information related to relevant DNA markers for
abol
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Mental Health Risk Report

NRG1 Gene

The neuregulin 1 (NRG1) gene expresses NRG1 proteins that stimulates the EGFR receptors which promotes neuron cell development as well as myelin production. NRG1 plays an important role in synaptic plasticity of the brain, which influences short-term learning and long-term memory.

Genotype Result

NRG1 C/C

What do my results mean?

Having the NRG1 T/T genotype can cause an over-expression of NRG1 proteins leading to reduced synaptic plasticity and disruption in neuron connections in the brain. The T/T genotype has been linked as a risk factor for mental health disorders such as psychosis, bipolar and schizophrenia.

Risk

Normal

How do I compare?

NRG1 Genotype	Mental Health Risk
C/C	Normal
C/T	Normal
T/T	Increased

Caucasians



● C/C Normal (37%)
● C/T Normal (48%)
● T/T Increased (15%)

Africans



● C/C Normal (40%)
● C/T Normal (46%)
● T/T Increased (14%)

Done

epo

Information related to relevant DNA markers for metabolism and mental health risk.

Report

Mental Health Risk Report

DISC1 Gene

The disrupted in schizophrenia (DISC1) gene expresses DISC1 proteins that are involved in important processes that regulate nervous system and brain development. It is a well-established genetic risk factor amongst different populations and ethnicities for psychiatric disorders.

Genotype Result
DISC1 T/T

What do my results mean?

Having the DISC1 T/T genotype has been shown to increase the risk for mental health disorders such as psychosis, bipolar and schizophrenia.

Risk
Increased ⬆

How do I compare?

DISC1 Genotype	Mental Health Risk
A/A	Normal
A/T	Normal
T/T	Increased

Caucasians



- Normal (52%)
- Normal (40%)
- Increased (8%)

Africans



- Normal (45%)
- Normal (44%)
- Increased (11%)

East Asians



- Normal (69%)
- Normal (28%)
- Increased (3%)

Done

Report Mental Health Risk Report

DISC1

Summary Report

Summary Genetics Report ✕



HTR2A Serotonin Gene

Classical psychedelics response to drugs such as psilocybin, LSD and DMT. SSRI adverse drug reaction response to drugs such as Paxil.

Psychedelics Sensitivity
Normal

SSRI Sensitivity
Normal



CYP2B6 Metabolism Gene

Slower ketamine metabolism can increase duration, intensity of effect and adverse drug reactions.

Ketamine Metabolism
Normal



C4A Risk Gene CNV

High C4A copy number variation can increase mental health risk.

Mental Health Risk
Normal



NRG1 Risk Gene

Can reduce synaptic plasticity and disrupt neuron connections which can increase mental health risk.

Mental Health Risk
Normal



DISC1 Risk Gene

Well-established risk factor amongst different populations and ethnicities for psychiatric disorders.

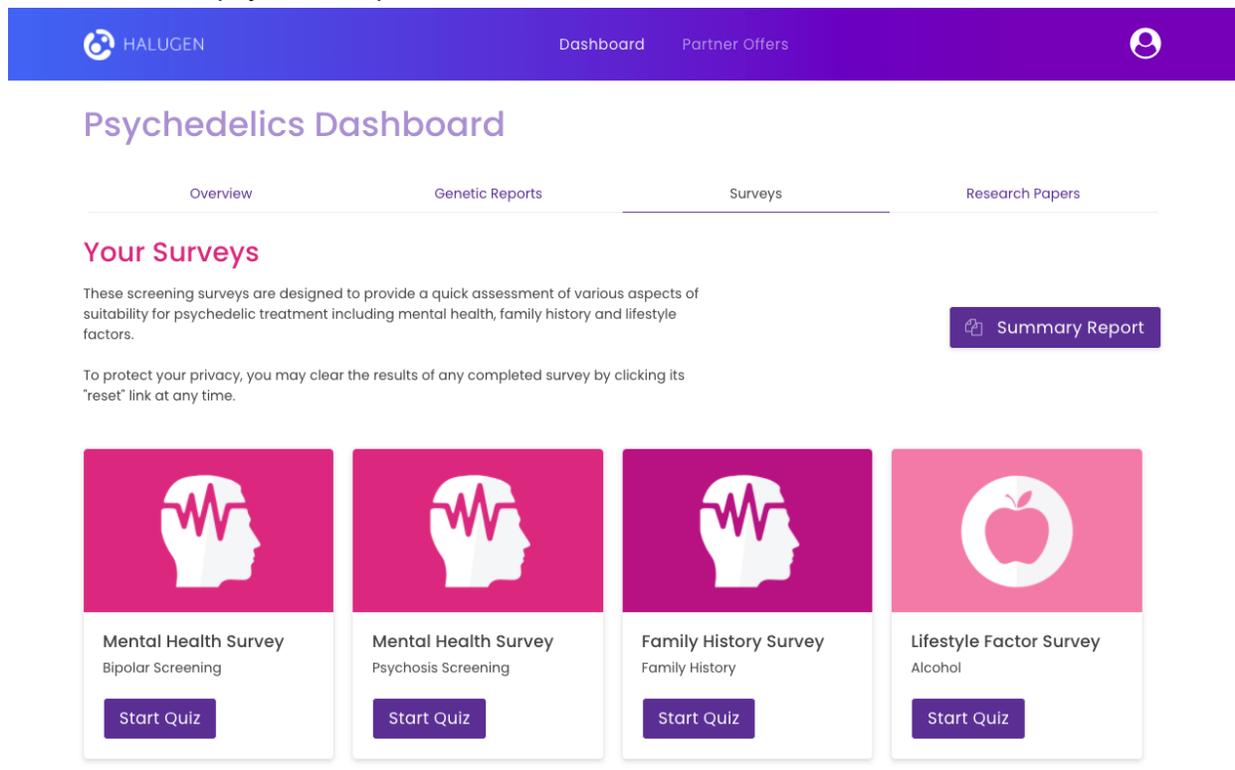
Mental Health Risk
Increased ⓘ

[Close](#)

6. Surveys

These surveys are some of the most frequently used assessment questionnaires used by mental health practitioners.

- They are optional to complete and can be reset at any time.
- By completing and sharing them with your licensed health care providers alongside your genetic test results, they can consider your overall suitability for various psychedelic-assisted psychotherapies.



The screenshot shows the HALUGEN website's Psychedelics Dashboard. The navigation bar includes 'Dashboard' and 'Partner Offers'. The dashboard has four tabs: 'Overview', 'Genetic Reports', 'Surveys', and 'Research Papers'. Under 'Your Surveys', there is a 'Summary Report' button and a privacy notice. Four survey cards are displayed, each with a 'Start Quiz' button:

- Mental Health Survey (Bipolar Screening):** Represented by a head icon with a red ECG line.
- Mental Health Survey (Psychosis Screening):** Represented by a head icon with a red ECG line.
- Family History Survey (Family History):** Represented by a head icon with a red ECG line.
- Lifestyle Factor Survey (Alcohol):** Represented by an apple icon.

Bipolar Screening

The Goldberg Bipolar Screening Quiz is designed to detect the extreme swings in mood that can be seen in bipolar. This survey is designed to provide a quick assessment of whether you might have signs and symptoms related to bipolar disorder, also known as manic depression.

Psychosis Screening

This screening quiz is designed to provide a quick assessment of whether you show signs and symptoms of psychosis (including schizophrenia). It is based on a questionnaire developed by the Psychosis Risk Syndrome Clinic (PRIME) group at Yale University Medical School.

Family History, Alcohol and Lifestyle Screenings

The Family History and Lifestyle Quizzes are designed to provide a quick assessment of whether you or someone in your family might potentially make you at a higher risk for psychedelic-assisted therapy.

Sample Quiz - Lifestyle Screening

Lifestyle Factor Survey
Other Drugs

Start Quiz

How To Use Your Results

Always talk to your health care practitioner... your reports should be confirmed in a clinical setting.

You haven't been pre-screened for all possible conditions. Your response include additional genetic, environmental, and lifestyle factors.

If you have questions about your test results, please contact your genetic counsellor.

Lifestyle Drugs Screening (1/5)

Description:

This Lifestyle Screening Survey for drugs (excluding alcohol) is designed to provide a quick assessment of the signs and symptoms related to drug abuse risk.

However, no test is 100% accurate. Only a licensed mental health professional can make a reliable, accurate diagnosis. No matter what your score is, you should seek help if you have any concerns.

Instructions:

Your responses should reflect your experience with drugs **within the past year (excluding alcohol)**. Drugs can include cannabis, tranquilizers, barbiturates, stimulants, hallucinogens and narcotics.

Close Start

Bipolar Screening

Start Quiz

Psychosis Screening

Family History

Alcohol

Start Quiz

Lifestyle Factor Survey
Other Drugs

Start Quiz

How To Use Your Results

Always talk to your health care practitioner... your reports should be confirmed in a clinical setting.

Lifestyle Drugs Screening (2/5)

Your experience with drugs in the past year (excluding alcohol):

Q1: Have you used drugs other than those required for medical reasons?

Yes No

Q2: Do you use more than one drug at a time?

Yes No

Q3: Are you always able to stop using drugs when you want to?

Yes No

Prev Next

Start Quiz

Start Quiz

Lifestyle Factor Survey
Other Drugs

Finish Quiz

How To Use Your Results

Lifestyle Drugs Screening (3/5)

Q4: Have you ever had blackouts or flashbacks as a result of drug use?

Yes No

Q5: Do you feel bad or guilty about your drug use?

Yes No

Q6: Do your spouse (or parents) ever complain about your involvement with drugs?

Yes No

Prev Next

Bipolar Screening Psychosis Screening Family History Alcohol

Start Quiz Start Quiz



Lifestyle Factor Survey
Other Drugs

Finish Quiz 9/10

Lifestyle Drugs Screening (4/5)

Q7: Have you neglected your family because of your use of drugs?

Yes No

Q8: Have you engaged in illegal activities to obtain drugs?

Yes No

Q9: Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?

Yes No

Prev Next

How To Use Your Results

Always talk to your health care practitioner before taking medical action based on the information in your reports. The information contained in your reports should be confirmed in a clinical setting and shouldn't be used to diagnose health conditions.

Bipolar Screening Psychosis Screening Family History Alcohol

Start Quiz Start Quiz



Lifestyle Factor Survey
Other Drugs

Finish Quiz 10/10

Lifestyle Drugs Screening (5/5)

Q10: Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions or bleeding)?

Yes No

Prev Next

How To Use Your Results

Start Quiz Start Quiz Start Quiz Start Quiz



Lifestyle Factor Survey
Other Drugs

Complete Reset

Lifestyle Drugs Screening (Results)

Your Score

No risk

Scoring	Drug Abuse Risk
0	No risk
1-2	Low risk
3-5	Moderate risk
6-8	Substantive risk
9-10	Severe risk

Done

How To Use Your Results

Always talk to your health care practitioner before taking medical action based on the information in your reports. The information contained in

7. Research Papers

Arranged by gene, you can look up peer-reviewed scientific papers used as references in the HaluGen genetic tests and surveys.



Psychedelics Dashboard

Overview

Genetic Reports

Surveys

Research Papers

Research Papers

If you're interested in the science behind your reports, we've assembled a number of relevant research papers for review. We've also included a HaluGen psychedelics and genetics pre-screening white paper for further reading.

[View White Paper](#)

HTR2A

CYP2B6

C4A

NRG1

DISC1

HTR2A Marker

[Madsen et al. \(2019\)](#), Psychedelic effects of psilocybin correlate with serotonin 2A receptor occupancy and plasma psilocin levels. *Neuropsychopharmacology*, 44: 1328-1334.

[Jakubczyk et al. \(2013\)](#), The CC genotype in the T102C HTR2A polymorphism predicts relapse in individuals after alcohol treatment. *Journal of Psychiatric Research*, 47(4): 527-533.

[Cao et al. \(2014\)](#), Association of the HTR2A Gene with Alcohol and Heroin Abuse. *Human Genetics*, 133: 357-365.

[Jokela et al. \(2007\)](#), Serotonin Receptor 2A Gene and the Influence of Childhood Maternal Nurturance on Adulthood Depressive Symptoms. *Archives of General Psychiatry*, 64(3): 356-360.

[Lee et al. \(2007\)](#), Association between Serotonin 2A Receptor Gene Polymorphism and Posttraumatic Stress Disorder. *Psychiatry Investigation*, 4: 104-108.

[Lorenzo et al. \(2007\)](#), Association between the T102C polymorphism of the serotonin-2A receptor gene and schizophrenia. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 30(6): 1136-1138.

[Lingaiah et al. \(2014\)](#), An insight into the understanding of 5-HTR2A variants leading to schizophrenia. *Indian Journal of Medical Research*, 140(6): 713-715.

[Eszlari et al. \(2019\)](#), Childhood Adversity Moderates the Effects of HTR2A Epigenetic Regulatory Polymorphisms on Rumination. *Frontiers in Psychiatry*, 10: Article 394.

[Sujitha et al. \(2014\)](#), 5-Hydroxytryptamine (serotonin) 2A receptor gene polymorphism is associated with schizophrenia. *Indian Journal of Medical Research*, 140(6): 736-743.

[Wu et al. \(2015\)](#), 5-HTR2A and IL-6 polymorphisms and obstructive sleep apnea-hypopnea syndrome. *Biomedical Reports*, 4(2): 203-208.

[Stevenson et al. \(2013\)](#), Antidepressant Tolerability and Potential Clinical Implications of Serotonin-2A Receptor Genotypes. *Clinical Pharmacology & Biopharmaceutics*, 2(2): 109.

[Murphy et al. \(2003\)](#), Pharmacogenetics of Antidepressant Medication Intolerance. *The American Journal of Psychology*, 160(10): 1830-1835.

[Murphy et al. \(2004\)](#), Effects of the Serotonin Transporter Gene Promoter Polymorphism on Mirtazapine and Paroxetine Efficacy and Adverse Events in Geriatric Major Depression. *Archives of General Psychiatry*, 61(11): 1163-1169.

[McManis et al. \(1997\)](#), Nausea and Vomiting Associated With Selective Serotonin Reuptake Inhibitors. *CNS Drugs*, 8: 394-401.

[Wacker et al. \(2017\)](#), Crystal Structure of an LSD-Bound Human Serotonin Receptor. *Cell*, 168: 377-389.

8. HaluGen.com Website Copy

Your psychedelics genetic profile with personalized reports and actionable insights delivered directly to your smartphone.

- Classic Psychedelics: Understand your serotonin response and sensitivity to classic psychedelics like psilocybin, LSD, and DMT
- Ketamine Metabolism: Discover your ketamine response based on genetics and method of consumption
- Mental Health Risk: Explore your short- and long-term risk factors associated with psychedelics use
- Future Updates: Latest research and studies, recommendations, and exclusive offers

Your serotonin sensitivity

The way your body responds to classical psychedelics such as psilocybin, LSD, and DMT, is influenced by the HTR2A gene. This gene influences the baseline expression of the 5-HT_{2A} receptor, which binds to serotonin and releases neurotransmitters in the brain. These neurotransmitters can cause potential hallucinations and other mental effects of the classical psychedelic "trip".

20% of people carry an HTR2A genetic variant which can increase receptor density, potentially making them more susceptible to stronger hallucinogenic effects. These individuals should be more cautious when considering classical psychedelic therapies.

Psychedelics sensitivity report includes

- Insight into serotonin response and how it can affect a "trip."
- Genetics by population and ethnicity
- How serotonin receptor density can also influence SSRI drug response and much more

Your sensitivity to ketamine

The way your body metabolizes ketamine, a fast-acting anesthetic with hallucinogenic properties, is influenced by the CYP2B6 gene. This gene encodes a liver enzyme that helps metabolize ketamine in your bloodstream. 10–20% of people carry the CYP2B6*6 genetic variant, which causes them to metabolize ketamine up to 2x to 3x slower than normal.

These 'slow metabolizers' should be more cautious when being dosed with ketamine, as they will likely experience an increased duration and intensity of the effect, especially when taking ketamine in intravenous or subcutaneous form.

Ketamine metabolism report includes

- Insight into intensity and duration of effects
- Genetics by population and ethnicity
- How metabolism can vary by ketamine format and much more

Your risk for psychedelics-related mental health effects

Genetics plays an important role in your short- and long-term risk for mental health effects such as schizophrenia and psychosis. The NRG1, DISC1, and C4A genes have all been shown to influence your genetic risk for these effects.

Studies have shown that misuse of psychedelics combined with genetic risk factors can increase the risk of adverse mental health effects.

Mental Health Reports include

- Short-term risk of adverse psychedelics-induced effects
- Long-term risk of psychosis and schizophrenia
- Genetics by population and ethnicity

Our Technology

Gold-standard DNA testing

Our genetic testing service uses gold-standard Polymerase Chain Reaction (PCR) technology, a well-established method for genotyping and analyzing DNA.

Your sample is handled and processed at our testing facility, located in Toronto, ON Canada, using our advanced testing platform in a controlled environment.

Our team of scientists and experts has done extensive scientific research to develop personalized insights, services, and reports.

Your Privacy Matters

We believe you should be in control of your information.

- We only examine a few relevant genetic markers, and your DNA sample is destroyed as part of the testing process.
- We will not sell, lease or rent your individual personal information to any third party without your explicit consent.
- You may request the deletion of your account and information at any time.