otogenetics® corporation

Patient Information

First name _____ Last name_____

Gender ☐Male ☐Female Date of birth (mm/dd/yy)_____

Ancestry:

☐Caucasian ☐Eastern European ☐Hispanic
☐Western European ☐Native American ☐Northern European
☐African American ☐Asian ☐Middle Eastern
☐Caribbean ☐Central/South American ☐Pacific Islander
☐Ashkenazi-Jewish ☐Other:_____

Mailing address_____

City _____ State_____Postal code_____

Home phone _____Work phone_____

Sample Information

Medical record # _____ Specimen ID _____

Date sample obtained (mm/dd/yy)_____

Specimen Type:

☐ Blood in BD Vacutainer® Collection Tube (4ml tube, 2mL blood)

☐ Saliva in DNAGenotek Oragene Tube (OG-510) (1 mL sample volume)

☐ Swab collected with DNAGenotek ORAcollect (OCR-100) device

☐ Other _____(Call lab before sending sample)

Patient has had an allogeneic bone marrow transplant ☐Yes ☐No

Date of last transfusion ____/____/____
(must be at least 2 weeks prior to blood draw for testing)

Addional Family Members (Optional)

Name (First, Last) _____ Date of birth (mm/dd/yy)_____ Sample Type _____ Relationship_____ Affected?___

Name (First, Last) _____ Date of birth (mm/dd/yy)_____ Sample Type _____ Relationship_____ Affected?___

Name (First, Last) _____ Date of birth (mm/dd/yy)_____ Sample Type _____ Relationship_____ Affected?___

Clinical Reporting Information

Reporting Preference: ☐EMR ☐Fax ☐Email

Physician_____NPI #_____

Genetic Counselor _____

Street address 1 _____

Street address 2 _____

City _____State _____Postal code_____

Phone _____ Fax _____

Email_____

Send Additional Report Copies To:

Physician or GC/Acct # _____

Fax #/Email/CE #_____

Physician or GC/Acct # _____

Fax #/Email/CE #_____

Statement of Medical Necessity

This test is medically necessary for the risk assessment, diagnosis or detection of a disease, illness, impairment, symptom, syndrome or disorder. The results will determine my patient's medical management and treatment decisions. The person listed as the Ordering Physician is authorized by law to order the tests(s) requested herein. I confirm that I have provided genetic testing information to the patient and they have consented to genetic testing.

Medical Professional
Signature (required)_____ Date_____

Patient Consent:

I have read the Informed Consent document (page 5), and I give permission to Otogenetics to perform genetic testing as described. I also give permission for my specimen and clinical information to be used in anonymized studies at Otogenetics and for publication, if appropriate. My name or other personal identifying information will not be used in or linked to the results of any studies and publications.

☐Check this box if you wish to opt out of research studies.

Patient Signature_____ Date_____

Please Choose a Payment Option

☐ **Institutional Bill**

Account # _____

Hospital/Lab Name_____

Contact Name_____

Address_____

City_____State_____ Zip Code_____

Phone_____Fax_____

☐Please send a duplicate report to this address

☐ **Patient Bill**

I understand that my credit card will be charged the full amount for the testing.

Please bill my credit card (all major cards accepted)

☐ MasterCard ☐ Visa ☐ Discover ☐ American Express

Name as it appears on card_____

Account #_____Exp. Date_____CVC_____

Signature _____Date_____

Test Selection	Cat.#	Price	Select Test
Human Exome (50.4mb capture, 70X average on-target coverage)	Oto-AV5	$1,998	
Duo (Patient plus 1 related family members, 1 report)	Oto-2AV5	$2,998	
Trio (Patient plus 2 related family members, 1 report)	Oto-3AV5	$3,998	
Family (Patient plus 3 related family members, 1 report)	Oto-4AV5	$4,998	

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Clinical Information

Clinical Diagnosis:_____

ICD-9/10 Codes: _____Diagnosis Age(s): _____

Clinical information is crucial for accurate interpretation of results. Please attach medical records.

Please check all that apply: This is not a substitute for submitting clinical records.

Perinatalhistory
- ❒Prematurity
- ❒IUGR
- ❒Oligohydramnios
- ❒Polyhydramnios
- ❒Cystic hygroma/increased NT

Growth
- ❒Failure to thrive
- ❒Growth retardation/short stature
- ❒Overgrowth
- ❒Macrocephaly / ❒Microcephaly

Physical/CognitiveDevelopment
- ❒Fine motor delay
- ❒Gross motor delay
- ❒Speech delay
- ❒Intellectual disability/MR IQ:_____
- ❒Learning disability
- ❒Developmental regression
- ❒Mental Illness

Behavioral
- ❒Autism spectrum disorder
- ❒Autistic features
- ❒Obsessive-compulsive disorder
- ❒Stereotypic behaviors
- ❒Other psychiatric symptoms

Craniofacial/Ophthalmalogic/Auditory
- ❒Cataracts
- ❒Cleft lip/palate
- ❒Coloboma of eye
- ❒CPEO (opthalmoplegia)
- ❒Ptosis
- ❒Blindness
- ❒Opticatrophy
- ❒Retinitis pigmentosa
- ❒Hearing loss
- ❒Ototoxicity (aminoglycoside-induced)
- ❒External ear malformation
- ❒Facial dysmorphism - please describe:

_____

Cardiac/congenital heart malformations
- ❒ASD / ❒VSD
- ❒Coarctationofaorta
- ❒Hypoplastic left heart
- ❒Tetralogy of Fallot
- ❒Cardiomyopathy
- ❒Arrhythmia/conduction defect
- ❒Other:

Cancer/Malignancy
- ❒Age of onset: _____
- ❒Tumor type: _____
- ❒Location(s): _____
- ❒Affected relatives: _____

_____

Skin/Hair
- ❒Abnormal hair: _____
  - ❒Quality/Quantity: _____
  - ❒Hair distribution: _____
- ❒Abnormal nails: _____
- ❒Abnormal pigmentation: _____
- ❒Abnormal connective tissue: _____
- ❒Blistering
- ❒Ichthyosis
- ❒Skin tumors/Malignancies
- ❒Other:

Brain malformations/abnormal imaging
- ❒Agenesis of the corpus callosum
- ❒Cerebral Palsy
- ❒Holoprosencephaly
- ❒Lissencephaly
- ❒Cortical dysplasia
- ❒Heterotopia
- ❒Hydrocephalus
- ❒Brainatrophy
- ❒Periventricular leukomalacia
- ❒Hemimegalencephaly
- ❒Abnormalities of basal ganglia
- ❒Other: _____

Neurological/Muscular
- ❒Ataxia
- ❒Chorea
- ❒Dystonia
- ❒Hypotonia / ❒Hypertonia
- ❒Seizures (type:_____)
- ❒Spasticity
- ❒Exercise intolerance/easy fatigue
- ❒Muscle weakness
- ❒Stroke/stroke-like episodes
- ❒Recurrent headache/migraine

Gastrointestinal
- ❒Gastroschisis/omphalocele
- ❒Pyloric stenosis
- ❒Tracheoesophageal fistula
- ❒Delayed gastric emptying
- ❒Eosinophilic esophagitis
- ❒Gastrointestinal reflux
- ❒Recurrent vomiting
- ❒Chronic diarrhea
- ❒Constipation
- ❒Chronic intestinal pseudo-obstruction
- ❒Hirschsprung disease
- ❒Hepatic failure
- ❒Elevated transaminases

Skeletal/Limbabnormalities
- ❒Contractures
- ❒Clubfoot
- ❒Polydactyly
- ❒Syndactyly
- ❒Scoliosis
- ❒Vertebral anomaly
- ❒Other: _____

Genitourinaryabnormalities
- ❒Ambiguous genitalia
- ❒Hypospadias
- ❒Hydronephrosis
- ❒Undescended testis
- ❒Kidney malformation
- ❒Renal agenesis
- ❒Renal tubulopathy
- ❒Other: _____

Endocrine
- ❒Diabetes mellitus:
  - ❒Type I ❒TypeII
- ❒Hypothyroidism / ❒Hypoparathyroidism
- ❒Pheochromocytoma/paraganglioma

Metabolic
- ❒Ketosis
- ❒Lactic acidemia/high CSF lactate
- ❒Elevated pyruvate
- ❒Elevated alanine
- ❒Organic aciduria
- ❒Low plasma carnitine
- ❒CPK abnormalities

Hemotologic/Immunologic
- ❒Anemia/neutropenia/pancytopenia
- ❒Immunodeficiency
- ❒Other: _____

Other testing (summarize or attach reports):
- ❒Chromosomes/FISH: _____
- ❒Array CGH: _____
- ❒Fragile X syndrome:_____
- ❒Muscle biopsy:_____
- ❒Other relevant results (clinical or research:)

_____

_____

_____

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Clinical Information

Clinical Diagnosis:_____

ICD-9/10 Codes: _____Diagnosis Age(s): _____

Clinical Indication(s)

- ☐ Amyotrophic Lateral Sclerosis
- ☐ Ataxia
- ☐ Autism
- ☐ Autoimmune Disorders
- ☐ Bleeding / Thrombotic Disorders
- ☐ Brain Malformation
- ☐ Cancer Susceptibility
- ☐ Cardiac Arrhythmia
- ☐ Cardiomyopathy
- ☐ Congenital Heart Defect
- ☐ Connective Tissue Disorders
- ☐ Craniofacial Abnormalities
- ☐ Deafness
- ☐ Developmental Delay
- ☐ Diarrheal Disorders
- ☐ Endocrine Disorders
- ☐ Epilepsy
- ☐ Eye Disorders, unspecified
- ☐ Kidney Abnormalities
- ☐ Liver Disease
- ☐ Metabolic Disorders
- ☐ Multiple Congenital Anomalies
- ☐ Muscular Dystrophy
- ☐ Neurologic Disorders, unspecified
- ☐ Primary Immunodeficiency
- ☐ Retinal Disorders
- ☐ Sexual Development Disorders
- ☐ Skeletal Dysplasia
- ☐ Skin Disorders
- ☐ Sudden Infant Death
- ☐ Sudden Unexplained Death
- ☐ Vascular Abnormalities
- ☐ Other:_____

Additional Description: _____

Differential Diagnosis: _____

Additional Suspected Gene(s): _____

Reference gene symbols from HGNC (HUGO Gene Nomenclature Committee http://www.genenames.org)

Family History:

☐ Congenital Anomalies ☐ Mental Retardation ☐ Multiple Miscarriages

☐ Parental Consanguinity / degree of relation:_____

☐ Other:_____

Family History of Conditions

☐ No Known Family History ☐ Pedigree Attached ☐ Adopted

Relationship	Maternal	Paternal	Condition / Symptoms	ICD 09 / 10
	☐	☐		
	☐	☐		
	☐	☐		
	☐	☐		
	☐	☐		
	☐	☐		

Previous Family Member Testing (Optional)

☐ Testing for a previously identified variant

Gene: _____ Variant: _____

Proband Name:_____Relationship to proband: _____

☐ Positive control included/will be sent - Positive control is recommended if previous test was performed at another lab.

☐ Positive control not available. Caveat language will be included on a negative report.

☐ Family Member Test Report included - A clear copy of the test report on the positive family member is recommended if previous test was performed at another lab.

Additional relevant clinical info:

_____

_____

_____

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Reporting of Incidental Findings in Clinical Genome Sequencing

As many different genes and conditions are analyzed in the Otogenetics genome sequencing test, this test may reveal some findings not directly related to the reason for ordering the genome sequencing (whole exome, comprehensive gene panels or small disease panels). Such findings are called "incidental" or "secondary" findings and can provide information that was not anticipated. Incidental findings are variants, identified by the genetic tests, in genes that are unrelated to the individual's reported clinical features.
The American College of Medical Genetics (ACMG) has recommended that incidental findings identified in 56 genes associated with various inherited disorders be reported for all probands undergoing genome sequencing.
Please refer to the ACMG Recommendations for Reporting of Incidental Findings in Clinical Exome and Genome Sequencing Report (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3727274/) for complete details of the genes and associated genetic disorders.
Reportable incidental findings will be confirmed by an alternate test method.

What will be reported for the proband

• All known pathogenic variants identified in the coding exons (for which a minimum of 10X coverage was achieved by the genomics sequencing test) of the 56 genes recommended by the ACMG.

• Expected pathogenic variants identified in the coding exons (for which a minimum of 10X coverage was achieved by the genomics sequencing test) in 41 of the 56 genes, as recommended by the ACMG.

What will be reported for relatives (if tested)

• The presence or absence for any incidental findings reported for the proband will be provided for all relatives tested. Relatives submitted for targeted segregation analysis only will not receive their status.

Limitations

The absence of reportable incidental findings for any particular gene does not mean there are no pathogenic variants in that gene.

• Negative test results do not exclude the possibility that a causative mutation not detectable by this sequencing technology exists within one of the tested genes, or within one or more genes not evaluated by the targeted gene panel.

• Pathogenic variants that may be present in a relative, but are not present in the proband, will not be identified, or reported.

• Only changes at the sequence level (and short insertions and deletions, <10 nucleotides) will be reported in the incidental findings report. Larger deletions/duplications, abnormal methylation, triplet repeat or other expansion mutations, or other variants not routinely identified by genomic, whole exome or gene panel sequencing will not be reported.

• Genetic counseling is recommended for any individual and their family to correlate test results with medical and family history and to fully understand all implications of the test results.

Select one:

☐ **NO:** I have read and understand the above information and I choose NOT to receive information on the incidental findings that is unrelated to the specific reason for which my health care provider ordered genetic testing.

☐ **YES:** I have read and understand the above information and I choose TO receive any/all information on the incidental findings from my genetic testing, regardless of any/all reason(s) my health care provider chose to order genetic testing.

_____
Patient or Guardian

I have provided genetic counseling to this individual/this individual's family regarding the implications of receiving incidental findings. I have explained the potential benefits and limitations of receiving incidental findings, and I have answered this person's questions.

_____
Health Care Provider Date

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Otogenetics Corporation Informed Consent

General information about genetic testing for hereditary disorders:

1. Genetic disorders may be caused by variants (changes) in the DNA sequence of a gene. Genetic disorders may also be due to a deletion (loss) or duplication (gain) of genetic material. The deletion or duplication may include part of a gene, an entire
gene, or multiple genes.

2. The purpose of genetic testing is to evaluate for changes in the DNA sequence of a gene and when clinically indicated, may look for deletions or duplications of gene(s).
This test may help determine if I am affected with, or am at risk to someday develop a form of a hereditary disorder.

3. The genes included on this test are associated with several different types of disorders and with varying levels of abnormal phenotype.

4. This test cannot identify all types of variants, deletions, or duplications causing genetic disorders. Specifically, this test cannot identify any genetic changes involving genes not included in the specific test(s) ordered by my health care provider. In rare instances, the Next Generation Sequencing (NGS) may identify a clinically significant genetic variant in a gene not included on the panel ordered. These findings may be disclosed to the ordering healthcare provider on a case-by-case basis.

5. I understand that this test is not the only way to look for genetic abnormalities. My health care provider may recommend this test before or after ordering other genetic or laboratory tests.

6. This test requires high-quality DNA. In some cases an additional sample may be needed if the volume, quality and/or condition of the initial specimen is not adequate.

7. Rarely, the test may reveal genetic gender information or genetic changes of clinical importance in gene(s) not included in the test, which will be disclosed to the ordering healthcare provider.

What could I learn from this genetic test?

1. Negative result - I may learn that no genetic abnormality was identified by this test. This reduces the likelihood, but does not exclude a hereditary disorder.

2. Positive result - I may learn that a genetic abnormality was identified that explains either the cause of disorder that I have and/or the risk that I have to develop an abnormal phenotype in the future. The type(s) of abnormality which I have depends on the gene involved. These results may aid my physician in making decisions about my medical management, including but not limited to screening, monitoring, or treatment and preventive strategies.

3. Variant of unknown significance (VUS) - I may learn that a VUS was identified by this test. This means that a genetic change (variant) was identified, but it is unknown whether the variant may cause a disorder. The variant could be a normal genetic difference that does not cause medical problems, or it could be a variant causing abnormality. Without further information, the effects of the variant may not be known, and an inconclusive result may be reported. Testing other affected family members may be necessary to determine the significance of the variant. The laboratory will provide additional information to my healthcare provider who is ordering this testing if this variant is determined to be benign or risk-causing.

What are the limitations and risks of this genetic test?

1. In some cases, testing may not identify an abnormality even though a genetic abnormality may exist. This may be due to limitations in current knowledge about a gene's complete structure. It may be due to the fact that some types of genetic abnormalities causing a specific hereditary disorder have not yet been identified. I understand that the methods used by Otogenetics are highly accurate. However, the chance of a false positive or false negative result, due to laboratory errors incurred during any phase of testing, or due to unusual circumstances (bone marrow transplantation, blood transfusion, presence of change(s) in such a small fraction of cells that they may not be detectable (mosaicism) or incorrect reporting of family history or relationships), cannot be completely excluded.

2. Accurate interpretation of the test results requires knowledge of the true biological relationships in a family. Failure to accurately disclose the biological relationships in a family may result in incorrect interpretation of results and/or inconclusive test results.

3. Genetic testing may reveal that the true biological relationships in a family are not as they were reported. For example, non-paternity means that the stated father of an individual is not the true biological father. It is possible that this test may detect non-paternity, and it may be necessary to report this finding to the individual(s) who requested testing.

4. You may be concerned about discrimination based on genetic test results. The federal government enacted the Genetic Nondiscrimination Act (GINA) of 2008 prohibiting this type of discrimination by health insurers and employers. Furthermore, genetic test results are deemed "Protected Health Information" per the Health Insurance Portability and Accountability Act (HIPAA) of 1996 which prohibits unauthorized disclosure of such information. These laws set a minimum standard of protection across the nation. Some states may have laws limiting the use of genetic information by other types of insurers as well. For additional information about these regulations, visit http://www.genome.gov/10002077.

5. The physical risk associated with this genetic test is that of the blood draw required in order to obtain the DNA. While the risk is low, some people may experience side effects such as soreness, bruising, dizziness, or fainting. Lower risks are associated with saliva samples.

Patient confidentiality and counseling:

1. To maintain confidentiality, I understand that results will be reported to the indicated
healthcare provider or ordering laboratory and upon request copied to additional healthcare provider(s) indicated on the test requisition form (page 1). I understand that
results may only be disclosed to others by my written consent and/or if demanded by an order of a court of competent jurisdiction.

2. Information obtained from the test may be used in scientific publications or presentations, but the identity of all individuals studied will not be revealed in such
publications or presentations.

3. It is recommended that I receive genetic counseling before and after having this test.
Further testing or additional consultations with physicians may be necessary.

Specimen retention

1. Submitted specimens will be banked at Otogenetics. DNA samples are not returned to individuals or to referring physicians unless requested.

2. In some cases, if further diagnostic tests are needed, a referring physician may request in writing that additional tests be performed on an existing DNA sample (additional costs apply). Additional testing will not be performed unless requested by an authorized healthcare professional.

3. In some cases, anonymized DNA may be used by the laboratory for new test development and/or laboratory quality assurance purposes after all identifiers have been removed.

4. NY residents: DNA sample can be retained for greater than 60 days after the completion of testing.