



## Donor 4811

### Genetic Testing Summary

Fairfax Cryobank recommends reviewing this genetic testing summary with your healthcare provider to determine suitability.

Last Updated: 08/17/18

Donor Reported Ancestry: Scandinavian, Irish, Polish, Dutch

Jewish Ancestry: No

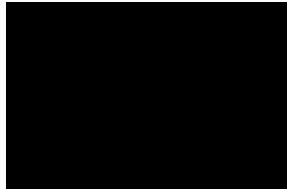
Genetic Test*	Result	Comments/Donor's Residual Risk**
Chromosome analysis (karyotype)	Normal male karyotype	No evidence of clinically significant chromosome abnormalities
Hemoglobin evaluation	Normal hemoglobin fractionation and MCV/MCH results	Reduced risk to be a carrier for sickle cell anemia, beta thalassemia, alpha thalassemia trait (aa/-- and a-/a-) and other hemoglobinopathies
Cystic Fibrosis (CF) carrier screening	Negative by genotyping of 99 mutations in the CFTR gene	1/300
Spinal Muscular Atrophy (SMA) carrier screening	Negative for deletions of exon 7 in the SMN1 gene	1/610
Hb Beta Chain-Related Hemoglobinopathy (including Beta Thalassemia and Sickle Cell Disease) by genotyping	Negative for 28 mutations tested in the HBB gene	1/290
Tay Sachs enzyme analysis	Non-carrier by Hexosaminidase A activity	

\*No single test can screen for all genetic disorders. A negative screening result significantly reduces, but cannot eliminate, the risk for these conditions in a pregnancy.

\*\*Donor residual risk is the chance the donor is still a carrier after testing negative.



#### Results Recipient



Report Date: 07/25/2013

#### Male

Name: DONOR 4811  
DOB: [REDACTED]  
Ethnicity: Northern European  
Sample Type: OG-510 Saliva  
Date of Collection: 07/23/2013  
Date Received: 07/24/2013  
Barcode: [REDACTED]  
Indication: Egg or Sperm Donor

#### Female

Not tested

### Counsyl Test Results Summary (Egg or Sperm Donor)

The Counsyl test (Fairfax Cryobank Fundamental Panel) uses copy number analysis and targeted genotyping as described in the methods section on page 2 to determine carrier status associated with **3 diseases**. Please refer to page 3 for a complete list of diseases and genes included in this panel.



#### *DONOR 4811*



DONOR 4811's DNA test shows that he is not a carrier of any disease-causing mutation tested.



#### *Partner*

The reproductive risk presented is based on a hypothetical pairing with a partner of the same ethnic group.

### *Reproductive Risk Summary*

No increased reproductive risks to highlight. Please refer to the following pages for detailed information about the results.

#### Clinical Notes

- If necessary, patients can discuss residual risks with their physician or a genetic counselor. To schedule a complimentary appointment to speak with a genetic counselor about these results, please visit [counsyl.com/counseling/](http://counsyl.com/counseling/).



Male

Name: DONOR 4811

DOB: [REDACTED]

Female

Not tested

## Methods and Limitations

### DONOR 4811: targeted genotyping and copy number analysis.

**Targeted genotyping:** Targeted DNA mutation analysis is used to simultaneously determine the genotype of 127 variants associated with 2 diseases. The test is not validated for detection of homozygous mutations, and although rare, asymptomatic individuals affected by the disease may not be genotyped accurately.

**Copy number analysis:** Targeted copy number analysis is used to determine the copy number of exon 7 of the SMN1 gene relative to other genes. Other mutations may interfere with this analysis. Some individuals with two copies of SMN1 are carriers with two SMN1 genes on one chromosome and a SMN1 deletion on the other chromosome. In addition, a small percentage of SMA cases are caused by nondeletion mutations in the SMN1 gene. Thus, a test result of two SMN1 copies significantly reduces the risk of being a carrier; however, there is still a residual risk of being a carrier and subsequently a small risk of future affected offspring for individuals with two or more SMN1 gene copies. Some SMA cases arise as the result of de novo mutation events which will not be detected by carrier testing.

**Limitations:** In an unknown number of cases, nearby genetic variants may interfere with mutation detection. Other possible sources of diagnostic error include sample mix-up, trace contamination, bone marrow transplantation, blood transfusions and technical errors. The Counsyl test does not fully address all inherited forms of intellectual disability, birth defects and genetic disease. A family history of any of these conditions may warrant additional evaluation. Furthermore, not all mutations will be identified in the genes analyzed and additional testing may be beneficial for some patients. For example, individuals of African, Southeast Asian, and Mediterranean ancestry are at increased risk for being carriers for hemoglobinopathies, which can be identified by CBC and hemoglobin electrophoresis or HPLC (*ACOG Practice Bulletin No. 78. Obstet. Gynecol. 2007;109:229-37*).

This test was developed and its performance characteristics determined by Counsyl, Inc. It has not been cleared or approved by the US Food and Drug Administration (FDA). The FDA does not require this test to go through premarket review. This test is used for clinical purposes. It should not be regarded as investigational or for research. This laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as qualified to perform high-complexity clinical testing. These results are adjunctive to the ordering physician's workup. Literature citations validating reported variants are available upon request. CLIA Number: #05D1102604.

Lab Director:

*Hyunseok Kang*

H. Peter Kang, MD



Male

Name: DONOR 4811

DOB [REDACTED]

Female

Not tested



## Diseases Tested

✓ **Cystic Fibrosis** - Gene: CFTR. Variants (99): G85E, R117H, R334W, R347P, A455E, G542X, G551D, R553X, R560T, R1162X, W1282X, N1303K, F508del, I507del, 2184delA, 3659delC, 621+1G>T, 711+1G>T, 1717-1G>A, 1898+1G>A, 2789+5G>A, 3120+1G>A, 3849+10kbC>T, E60X, R75X, E92X, Y122X, G178R, R347H, Q493X, V520F, S549N, P574H, M1101K, D1152H, 2143delT, 394delTT, 444delA, 1078delT, 3876delA, 3905insT, 1812-1G>A, 3272-26A>G, 2183AA>G, S549R(A>C), R117C, L206W, G330X, T338I, R352Q, S364P, G480C, C524X, S549R(T>G), Q552X, A559T, G622D, R709X, K710X, R764X, Q890X, R1066C, W1089X, Y1092X, R1158X, S1196X, W1204X(c.3611G>A), Q1238X, S1251N, S1255X, 3199delG, 574delA, 663delT, 935delA, 936delTA, 1677delTA, 1949del84, 2043delG, 2055del9>A, 2108delA, 3171delC, 3667del4, 3791delC, 1288insTA, 2184insA, 2307insA, 2869insG, 296+12T>C, 405+1G>A, 405+3A>C, 406-1G>A, 711+5G>A, 712-1G>T, 1898+1G>T, 1898+5G>T, 3120G>A, 457TAT>G, 3849+4A>G, Q359K/T360K. Detection rate: Northern European 91%.

✓ **Hb Beta Chain-Related Hemoglobinopathy (Including Beta Thalassemia and Sickle Cell Disease)** - Gene: HBB. Variants (28): Hb S, K17X, Q39X, Phe41fs, Ser9fs, IVS-II-654, IVS-II-745, IVS-II-850, IVS-I-6, IVS-I-110, IVS-I-5, IVS-I-1(G>A), -88C>T, -28A>G, -29A>G, Lys8fs, Phe71fs, IVS-II-849(A>C), IVS-II-849(A>G), Gly24 T>A, -87C>G, Hb C, W5X, Gly16fs, Glu6fs, Hb E, Hb D-Punjab, Hb O-Arab. Detection rate: Northern European 83%.

✓ **Spinal Muscular Atrophy (copy number analysis only)** - Gene: SMN1. Variant (1): SMN1 copy number. Detection rate: Northern European 95%.



Male

Name: DONOR 4811

DOB: [REDACTED]

Female

Not tested

## Risk Calculations

Below are the risk calculations for all diseases tested. Since negative results do not completely rule out the possibility of being a carrier, the **residual risk** represents the patient's post-test likelihood of being a carrier and the **reproductive risk** represents the likelihood the patient's future children could inherit each disease. These risks are inherent to all carrier screening tests, may vary by ethnicity, are predicated on a negative family history and are present even after a negative test result. Inaccurate reporting of ethnicity may cause errors in risk calculation.

Disease	DONOR 4811 Residual Risk	Reproductive Risk
Cystic Fibrosis	1 in 300	1 in 33,000
Hb Beta Chain-Related Hemoglobinopathy (Including Beta Thalassemia and Sickle Cell Disease)	1 in 290	1 in 58,000
Spinal Muscular Atrophy	SMN1: 2 copies 1 in 610	1 in 84,000



## Cytogenetic Report

Client [REDACTED]

Address [REDACTED]

Reporting Phone # [REDACTED]

Fax # [REDACTED]

Email [REDACTED]

Patient name/Donor Alias Donor # 4811

Patient DOB N/A

Donor # 4811-130729

Specimen type Peripheral Blood

Collection Date 07/29/2013

Accession # [REDACTED]

Date Received 07/30/2013

### RESULTS

#### CYTOGENETIC ANALYSIS

#### FISH

Cells counted 20

Type of banding GTG

Probe(s) N/A

Cells analyzed 5

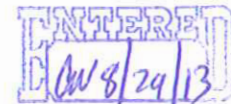
Band resolution 550

Nuclei scored N/A

Cells karyotyped 2

Modal chromosome # 46

KARYOTYPE 46,XY



#### INTERPRETATION

Normal male karyotype

No clonal numerical or structural abnormalities were identified. This normal cytogenetic result does not exclude the possibility of the presence of subtle rearrangements beyond the technical limits of detection with this test.

#### Comments

Wayne S. Stanley, Ph.D., FACMG  
Clinical Cytogeneticist

8/12/13

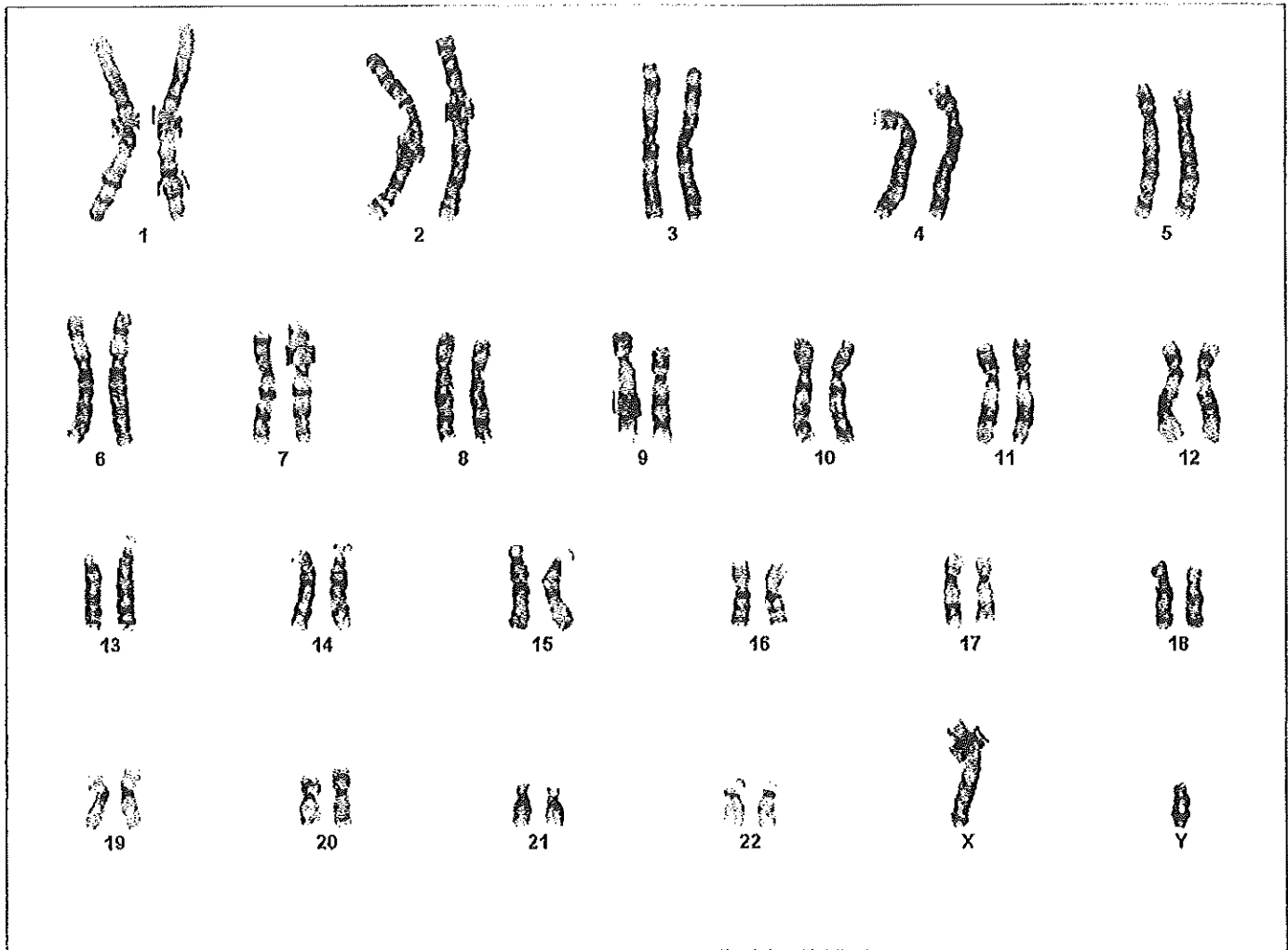
Date

Genetics and IVF Preimplantation Genetics Laboratory

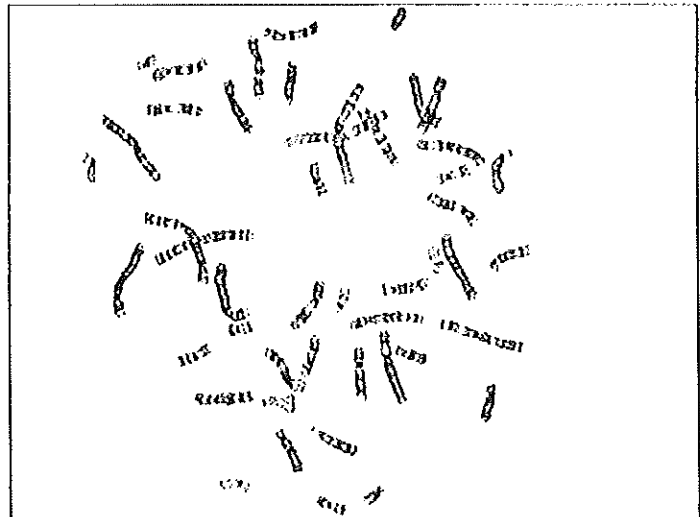
Patient name: DONOR # 4811

Case name: [REDACTED]

46,XY



Case: [REDACTED] Slide: A1 Cell: 20



Patient Information	Specimen Information	Client Information
<b>ID4811, DONOR</b>  <b>DOB:</b> [REDACTED] <b>AGE:</b> [REDACTED] <b>Gender:</b> M <b>Phone:</b> NG <b>Patient ID:</b> [REDACTED] <b>Health ID:</b> [REDACTED]	<b>Specimen:</b> [REDACTED] <b>Requisition:</b> [REDACTED] <b>Lab Ref #:</b> [REDACTED]  <b>Collected:</b> 07/29/2013 <b>Received:</b> 07/30/2013 / 04:06 CDT <b>Reported:</b> 07/30/2013 / 14:57 CDT	<b>Client #:</b> 22663146    4195000 [REDACTED]

Test Name	In Range	Out Of Range	Reference Range	Lab
HEMOGLOBINOPATHY EVALUATION				
RED BLOOD CELL COUNT	5.38		4.20-5.80 Million/uL	CB
HEMOGLOBIN	15.5		13.2-17.1 g/dL	
HEMATOCRIT	46.9		38.5-50.0 %	
MCV	87.1		80.0-100.0 fL	
MCH	28.8		27.0-33.0 pg	
RDW	13.1		11.0-15.0 %	
HEMOGLOBIN A	97.7		>96.0 %	CB
HEMOGLOBIN F	<1.0		<2.0 %	
HEMOGLOBIN A2 (QUANT)	2.3		1.8-3.5 %	
INTERPRETATION				

Normal phenotype.

Normal hemoglobin distribution, no HgS, HgC or other abnormal hemoglobin observed.

**PERFORMING SITE:**

CB QUEST DIAGNOSTICS WOOD DALE, 1355 MITTEL BOULEVARD, WOOD DALE, IL 60191-1024 Laboratory Director: ANTHONY V. THOMAS, MD, CLIA: 14D0417052

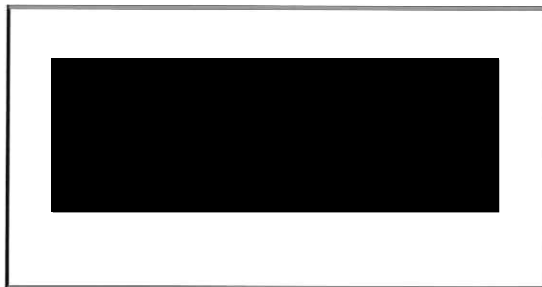
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## Tay-Sachs Enzyme Analysis

**Patient Name:** Donor 4811, .  
**Referring Physician:** Harvey Stern, MD  
**Specimen #:** [REDACTED] **Client #:** 606452  
**Patient ID:** [REDACTED]

**DOB:** [REDACTED] **Date Collected:** 07/29/2013  
**SSN:** \*\*\*-\*\*-\*\*\*\* **Date Received:** 07/30/2013  
**Lab ID:** [REDACTED]  
**Hospital ID:**  
**Specimen Type:** White Blood Cells



**RESULTS:** **Hexosaminidase Activity :** 1482 nmol/mg protein  
**Hexosaminidase Percent A:** 61.4

		Plasma/Serum	WBC
Expected Non-Carrier Range:	Hex A	≥54%	≥54%
Expected Carrier Range:	Hex A	20 - 49%	20 - 49%

### INTERPRETATION: NON CARRIER

This result is within the non-carrier range for Tay-Sachs disease. Less than 0.1% of patients having non-carrier levels of Hexosaminidase-A activity are Tay-Sachs carriers.

**NOTE:** Maximum sensitivity and specificity for Tay-Sachs disease carrier testing are achieved by using enzymology and DNA mutation analysis together.

Integrated Genetics is a business unit of Esoterix Genetic Laboratories, LLC, a wholly-owned subsidiary of Laboratory Corporation of America Holdings.

ENTERED  
8/29/13

Under the direction of:



*Stanford Marenberg, PhD, MOC*  
Stanford Marenberg, Ph.D.

Testing Performed At Esoterix Genetic Laboratories, LLC 2000 Vivigen Way Santa Fe, NM 87505 1-800-848-4436

Date: 08/06/2013

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