



Donor 4928

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: Irish, Dutch, Scottish, English, German, Mexican

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
Fairfax Cryobank - [REDACTED]
[REDACTED]
Report Date: 04/09/2014

Male
Name: 4928 4928
DOB: [REDACTED]
Ethnicity: Northern European
Sample Type: EDTA Blood
Date of Collection: 04/04/2014
Date Received: 04/07/2014
Barcode: [REDACTED]
Indication: Egg or Sperm Donor
Test Type: The Counsyl Test

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.



4928 4928



4928 4928'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/.

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Male

Name: 4928 4928

DOB: [REDACTED]

Female

Not tested

Methods and Limitations

4928 4928: The Counsyl Test - copy number analysis and targeted genotyping.

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. CLIA Number: #05D1102604.

Lab Directors:

Hyunseok Kang

H. Peter Kang, MD, MS, FCAP

Jelena Brezo

Jelena Brezo, PhD, FACMG

Male

Name: 4928 4928

DOB: [REDACTED]

Female

Not tested

Diseases Tested

Cystic Fibrosis - Gene: CFTR. Variants (99): G85E, R117H, R334W, R347P, A455E, G542*, G551D, R553*, R560T, R1162*, W1282*, N1303K, c.1521_1523delCTT, c.1519_1521delATC, c.2052delA, c.3528delC, c.489+1G>T, c.579+1G>T, c.1585-1G>A, c.1766+1G>A, 2789+5G>A, c.2988+1G>A, 3849+10kbC>T, E60*, R75*, E92*, Y122*, G178R, R347H, Q493*, V520F, S549N, P574H, M1101K, D1152H, c.2012delT, c.262_263delTT, c.313delA, c.948delT, c.3744delA, c.3773dupT, c.1680-1G>A, 3272-26A>G, c.2051_2052delAAinsG, S549R, R117C, L206W, G330*, T338I, R352Q, S364P, G480C, C524*, S549R, Q552*, A559T, G622D, R709*, K710*, R764*, Q890*, R1066C, W1089*, Y1092X, R1158*, S1196*, W1204*, Q1238*, S1251N, S1255*, c.3067_3072del6, c.442delA, c.531delT, c.803delA, c.805_806delAT, c.1545_1546delTA, 1949del84, c.1911delG, c.1923_1931del9ins1, c.1976delA, c.3039delC, c.3536_3539delCCAA, c.3659delC, c.1155_1156dupTA, c.2052dupA, c.2175dupA, c.2738insG, 296+12T>C, c.273+1G>A, 405+3A>C, c.274-1G>A, 711+5G>A, c.580-1G>T, c.1766+1G>T, 1898+5G>T, Q996, c.325_327delTATinsG, 3849+4A>G, c.1075_1079del5ins5. Detection rate: Northern European 91%.

Hb Beta Chain-Related Hemoglobinopathy (Including Beta Thalassemia and Sickle Cell Disease) - Gene: HBB. Variants (28): E7V, K18*, Q40*, c.126_129delCTTT, c.27dupG, IVS-II-654, IVS-II-745, c.315+1G>A, IVS-I-6, IVS-I-110, IVS-I-5, c.92+1G>A, -88C>T, -28A>G, -29A>G, c.25_26delAA, c.217dupA, c.316-2A>C, c.316-2A>G, G25, -87C>G, E7K, W16*, c.51delC, c.20delA, E27K, E122Q, E122K. 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: 4928 4928

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 | 4928 4928 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 |



GENETICS & IVF
Institute

Cytogenetic Report

Client Fairfax Cryobank - [REDACTED]

Address [REDACTED]

Reporting Phone # [REDACTED]

Fax # [REDACTED]

Email [REDACTED]

Patient name/Donor Alias Donor # 4928

Patient DOB N/A

Donor # 4928 [REDACTED]

Specimen type Peripheral Blood

Collection Date 04/04/2014

Accession # [REDACTED]

Date Received 04/05/2014

RESULTS

CYTOGENETIC ANALYSIS

FISH

Cells counted 20
Cells analyzed 5
Cells karyotyped 2
Modal chromosome # 46

Type of banding GTG
Band resolution 550

Probe(s) N/A
Nuclei scored N/A

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

4/17/14

Date

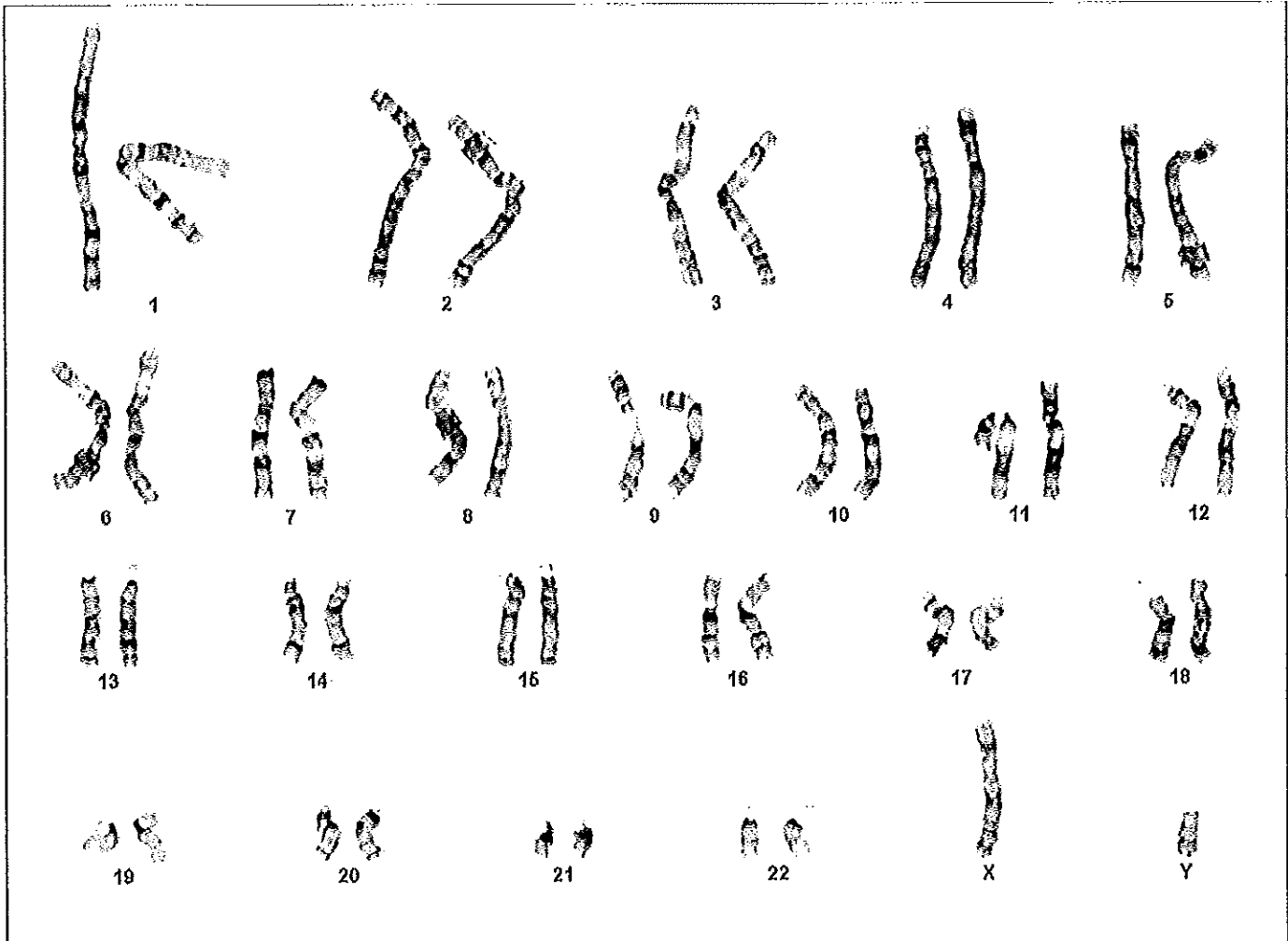
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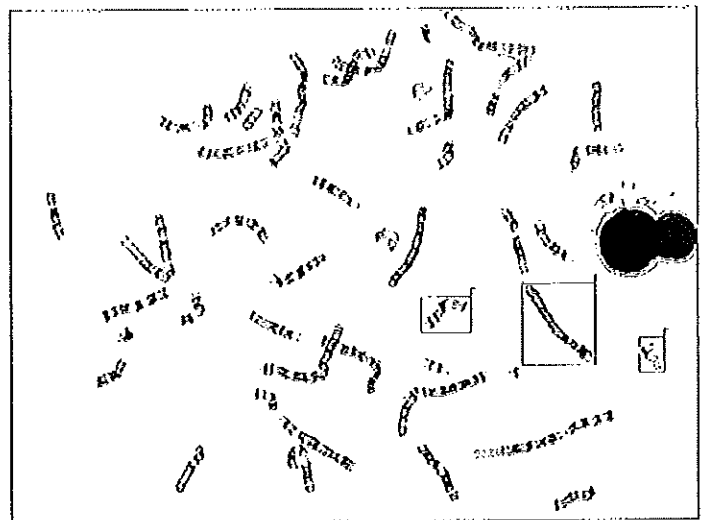
Patient name: DONOR # 4928.

Case name: [REDACTED]

46,XY



Case: [REDACTED] Slide: C1 Cell: 19



| Patient Information | Specimen Information | Client Information |
|---|--|---|
| ID, 4928 DOB: Not Given AGE: Not Given Gender: M Fasting: N Phone: NG Patient ID: NG | Specimen: ██████████ Requisition: ██████████ Collected: 04/04/2014 / 11:45 EDT Received: 04/04/2014 / 21:51 EDT Faxed: 04/07/2014 / 15:02 EDT | Client #: 19104437 HO130000 ██████████ FAIRFAX CRYO BANK ██ |

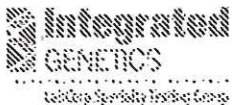
| Test Name | In Range | Out Of Range | Reference Range | Lab |
|-----------------------------|----------|--------------|----------------------|-----|
| HEMOGLOBINOPATHY EVALUATION | | | | |
| RED BLOOD CELL COUNT | 4.90 | | 4.20-5.80 Million/uL | QHO |
| HEMOGLOBIN | 14.3 | | 13.2-17.1 g/dL | |
| HEMATOCRIT | 43.0 | | 38.5-50.0 % | |
| MCV | 87.7 | | 80.0-100.0 fL | |
| MCH | 29.2 | | 27.0-33.0 pg | |
| RDW | 12.3 | | 11.0-15.0 % | |
| HEMOGLOBIN A | 96.7 | | >96.0 % | QHO |
| HEMOGLOBIN F | <1.0 | | <2.0 % | |
| HEMOGLOBIN A2 (QUANT) | 2.3 | | 1.8-3.5 % | |
| INTERPRETATION | | | | |

Normal phenotype.

PERFORMING SITE:

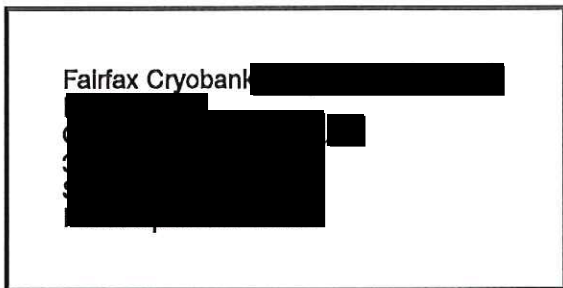
QHO QUEST DIAGNOSTICS HORSHAM, 900 BUSINESS CENTER DRIVE, HORSHAM, PA 19044-3432 Laboratory Director: ANDREW S EDELMAN, MD PHD, CLIA: 39D0204404

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Tay-Sachs Enzyme Analysis

Patient Name: 4928, .
Referring Physician: [REDACTED]
Specimen #: [REDACTED] Client #: [REDACTED]
Patient ID: [REDACTED]



DOB: Not Given Date Collected: 04/04/2014
SSN: ***_*_*_**** Date Received: 04/07/2014
Lab ID: 4928-[REDACTED]
Hospital ID:
Specimen Type: White Blood Cells

RESULTS: Hexosaminidase Activity : 947 nmol/mg protein
Hexosaminidase Percent A: 56.1

| | | 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.

Under the direction of:

Stanford Marenberg, PhD, MCCC

Stanford Marenberg, Ph.D.

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04-19-14

Date: 04/11/2014

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