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Alpha-thalassemia GenotypR™ INFORMED CONSENT

1. What is alpha-thalassemia? Alpha-thalassemia is an inherited disorder that affects the production of normal hemoglobin (a type of protein in red blood cells that carries oxygen to the tissues of the body). It includes a number of different forms of anemia. The severity and type of anemia depends upon the number of alpha globin genes that are affected.

2. What causes alpha thalassemia? The primary cause of alpha-thalassemia is alpha-globin gene deletions, which account for approximately 90% of mutations. Point mutations within the alpha-globin genes account for the remaining 10% of mutations. Typically, individuals have 4 functional alpha-globin genes, 2 copies on each chromosome 16. An individual with one alpha-globin gene mutation and three functional alpha-globin genes is a silent carrier. An individual who carries two alpha-globin gene mutations and two functional alpha-globin genes is a carrier of the alpha-thalassemia trait, and may be unaffected or only mildly affected. Individuals who have only one functional alpha-globin gene have HbH disease. Deletion of all four alpha-globin results in the accumulation of Hb Barts and hydrops fetalis, which is fatal in utero or shortly after birth. The carrier frequency is estimated to be 1 in 20 for Southeast Asians, 1 in 30 for African Americans and 1 in 30-50 for Mediterranean populations.

3. What is the purpose of this test and what are its limitations? This test detects the presence of twenty-one alpha-thalassemia mutations. This assay detects more than 95% of all alpha-thalassemia mutant alleles commonly found in Mediterranean countries and more than 99% of all those reported in the Middle East and South East Asia. If these mutations are not found by the testing procedure, it does not mean that the risk of carrying or developing alpha-thalassemia is not present. It simply means that these specific mutations have not been found, although other mutations may be present.

4. What is required to perform this test? You will be asked to provide 5 mL of blood, which is equal to about one tablespoon. DNA will be extracted from this blood sample and tested. The only discomfort that you may feel is the stick of the needle in your arm. You may also experience a small bruise at the site of the needle puncture. You will also be asked to provide information regarding your medical history, which is necessary for proper interpretation of your test result. In the unlikely event that you should be injured in the course of being tested, your physician will provide any necessary medical care. However, you would be expected to bear the cost of such medical care. Compensation will not be provided in the event of any injury.

5. Is there a cost for this test? This is a routine clinical laboratory test and the results may aid in your diagnosis; thus, you or your health insurer will be billed for this procedure.

6. What will happen to the DNA once the test is complete? The original blood sample will be discarded at the end of the testing process or stored not more than 60 days. The DNA will be retained for a minimum of 6 months. In some circumstances, a patient's DNA may be used anonymously as a negative or positive control sample in future testing, but, in this circumstance, all identifiers will be removed prior to re-testing and the DNA sample and results obtained will remain anonymous.

I understand and agree that my DNA remaining after testing may be stored for up to 6 months should additional testing be required. *Please initial.*

7. How will I obtain results from this test? DNA testing and interpretation of results are complex. The information from this test will be provided in the form of a written report to your physician who will inform you of the results. The laboratory will not provide results directly to patients. Your physician may suggest genetic counseling prior to performing this test or if your results are abnormal. To the extent permitted by law, all of your laboratory records and results are confidential and shall not be disclosed without your written authorization.

Patient Attestation of Informed Consent:

My signature below indicates that I have received information about this test, **Alpha-thalassemia GenotypR™**, and that I have read and understood the material in this document. I have been given a full opportunity to ask questions that I may have about the testing procedure and related issues. I agree to undergo this testing.

 Patient Signature

 Date

 Signature of Parent/Guardian if Patient is a minor

 Print Name of Parent/Guardian

For the Physician:

As the referring physician, I understand the benefits and limitations of this study and have requested that the above-named patient be tested. I attest to the fact that I have provided the patient with the information contained above and fully answered any questions. I believe that the patient understands the information and is voluntarily signing this informed consent.

 Signature of Physician/Health Care Professional

 Print Name of Physician/Health Care Professional