

SPECIMEN INFORMATION

Specimen: Blood **Date Collected:** (mm/dd/yyyy) ____ / ____ / ____
 Saliva (*NOT accepted for panel testing, only for Familial Variant Testing.*)
 Cord Blood (*Maternal cell contamination studies must be completed prior to sending and report must be attached to this form.*)
 DNA derived from (*Choose One*):
 Whole Blood Cord Blood* CVS* Amnio* Other _____
 If proving DNA, name and CLIA # of lab performing blood draw: _____

PATIENT INFORMATION

| | |
|--|---|
| First name: _____ MI: _____ Last name: _____ Date of Birth: (mm/dd/yyyy) ____ / ____ / ____ Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown/Unspecified Is patient pregnant? <input type="checkbox"/> No <input type="checkbox"/> Yes EDD: _____ Address: _____ City: _____ State: _____ Zip Code: _____ Phone: _____ Email: _____ | Institution: _____ Medical Record Number: _____ Is the patient adopted? <input type="checkbox"/> No <input type="checkbox"/> Yes Is the patient deceased? <input type="checkbox"/> No <input type="checkbox"/> Yes, date: _____ Race and Ethnicity: <i>Please check ALL that apply</i> <input type="checkbox"/> White <input type="checkbox"/> Ashkenazi Jewish <input type="checkbox"/> Asian <input type="checkbox"/> Hispanic <input type="checkbox"/> Black/African American <input type="checkbox"/> Native Hawaiian or other Pacific Islander <input type="checkbox"/> American Indian/Native Alaskan <input type="checkbox"/> Other _____ |
|--|---|

REFERRING PROVIDER INFORMATION

| Referring Provider | Genetic Counselor / Additional Contacts |
|--|---|
| Name (First, Last): _____ | Name (First, Last): _____ |
| Phone: _____ Fax: _____ | Phone: _____ Fax: _____ |
| Email: _____ | Email: _____ |
| Institution: _____ | Institution: <input type="checkbox"/> Same as Referring Provider <input type="checkbox"/> Provided below |
| Address: _____ | _____ |
| _____ | _____ |
| City: _____ State: _____ | Place facility sticker here |
| Zip Code: _____ Country: _____ | _____ |

PAYMENT INFORMATION

Please note: Payment information must be completed for testing to begin.

| | |
|--|---|
| <input type="checkbox"/> Patient Pay (please complete section in its entirety)** <input type="checkbox"/> Check (<i>please attach to forms</i>)* <small>*Please make checks payable to Partners Personalized Medicine*</small> <input type="checkbox"/> Credit card (<i>please fill out credit card information in its entirety</i>) Card type: <input type="checkbox"/> Mastercard <input type="checkbox"/> Visa <input type="checkbox"/> AMEX Name (as it appears on card): _____ Credit card number: _____ Expiration Date: _____ 3 Digit Security Code: _____ <small>**For patient pay, please provide billing address and contact information. If same as above, please note section as such.**</small> Patient Pay Billing Address: _____ City: _____ State: _____ Zip Code: _____ Country: _____ Home: _____ Cell/Work: _____ Email: _____ | <input type="checkbox"/> Referring Institution (please complete section in its entirety) <small>*For new referring facilities, please complete and submit the New Institution Add Form*</small> Bill to Name/Department: _____ Address: _____ _____ City: _____ State: _____ Zip Code: _____ Country: _____ Phone: _____ Contact Person: _____ |
|--|---|

Patient Name: _____ Date of Birth: ____/____/____ (MM/DD/YYYY)

SPECIMEN & SHIPPING REQUIREMENTS

The preferred blood specimen is a 7 ml blood sample (3-5ml for infants) collected in a lavender top (K₂EDTA or K₃EDTA) blood tube. Smaller blood samples or other tissue specimens may also be acceptable for certain tests. All samples must have two patient identifiers, preferably the patient's name and date of birth. Please contact the laboratory for more details.

Each sample must be accompanied by a requisition form (available at Partners.org/PersonalizedMedicine/Laboratory-For-Molecular-Medicine/Ordering). The ordering provider must sign the declaration below.

The blood sample (with forms) should be shipped overnight at room temperature to: Laboratory for Molecular Medicine
65 Landsdowne Street
Cambridge, MA 02139

For more detailed information about shipping requirements and procedures, see our website Partners.org/PersonalizedMedicine/Laboratory-For-Molecular-Medicine/Ordering/Sample-Requirements-Payment-Shipping.

LABORATORY FOR MOLECULAR MEDICINE POLICIES

By requesting testing from the Laboratory for Molecular Medicine (LMM), the ordering provider indicates that he/she understands AND accepts the policies of the LMM, as noted below, and has communicated these policies to the patient.

1. Our testing process includes highly skilled technicians and advanced technology. As in any laboratory, there is a small possibility that the test will not work properly, or an error may occur.
2. Listed turn around times (TATs) represent the typical TAT for a test, but are not guaranteed.
3. If the requisition form is incomplete, and the healthcare provider cannot provide the required information, lab staff may need to contact patients directly to obtain or verify the information needed to complete the form.
4. Test results, as well as any updates to those results, may become part of a patient's permanent medical record (electronically or otherwise) or be made available (electronically or otherwise) to the ordering healthcare institution and its healthcare team.
5. Results will only be released to the ordering provider and other providers listed on the requisition form. The ordering provider assumes the responsibility to disclose the test results and direct care as appropriate.
6. The ordering provider can obtain access to your genomic sequence files for the purpose of your clinical care.
7. Test results and submitted clinical information may be shared with other clinical laboratories for the purpose of improving our understanding of the relationship between genetic changes and clinical symptoms. Sharing data in this manner may enable us to provide better interpretations of your genetic findings as well as assist other patients with similar results. We will protect your privacy/confidentiality by removing your name and other direct identifiers, such as SSN or medical record number, from data shared with other laboratories.

New York residents only: By initialing this section, I confirm that I am a New York state resident, and I give permission for LMM to retain any remaining sample longer than 60 days after the completion of testing, and to be used as a de-identified sample for test development and improvement, internal validation, quality assurance, and training purposes. Otherwise, New York state law requires LMM to destroy my sample after 60 days, and it cannot be used for test development. Please initial here if you wish to give permission to maintain your isolated DNA: _____

RESEARCH POLICIES & OPPORTUNITIES

Blood or other samples sent to the LMM may be used by Partners Healthcare System (PHS), by medical organizations connected to PHS, or by educational or business organizations approved by PHS, for IRB approved research, education and other activities that support PHS's mission, without your/the patient's specific consent. Other types of research performed in association with the Laboratory for Molecular Medicine require that we obtain consent from the patient (see below).

PATIENTS - Please check off and initial below whether we can contact you to let you know about research studies in which you/your child may be able to participate.

Please check one option: _____ Yes, you can contact me _____ (patient initials)
If yes, please provide your contact information on the first page
_____ No, please do not contact me _____ (patient initials)

ORDERING PROVIDER SIGNATURE

New York State residents excluded, require lab to obtain full informed consent

I, _____ (print name), as ordering provider, certify that the patient being tested and/or their legal guardian have been informed of the risks, benefits, and limitations of the testing ordered, as well as the policies of the LMM listed above. I have obtained informed consent, as required by my own state and/or federal laws. In addition, I assume responsibility for returning the results of genetic testing to my patient and/or their legal guardian and for ensuring that my patient receives appropriate genetic counseling to understand the implications of their test results.

Signature (Ordering Provider)

Date

Please Note: A patient consent form is available on our website (Partners.org/PersonalizedMedicine/Laboratory-For-Molecular-Medicine/Ordering/Policies) for your convenience and DOES NOT need to be returned to the LMM.
Laboratory for Molecular Medicine - 65 Landsdowne Street - Cambridge, MA, 02139

Phone: 617-768-8500 • Fax: 617-768-8513 • Website: Partners.org/PersonalizedMedicine/Laboratory-For-Molecular-Medicine • Email: Imm@partners.org

Last Revised: 30 Apr 2019

APOL1 REQUISITION FORM

Patient Name: _____ Date of Birth: ____/____/____ (MM/DD/YYYY)

TEST TO BE PERFORMED

Please check box(es) to order.

APOL1 Genotyping (Ser342Gly, Ile384Met, & Asn388_Tyr389del) \$400

CLINICAL INFORMATION

Clinical status: Affected Unknown Unaffected
Purpose of study: Diagnostic Risk Assessment Family history Other _____

ICD-10 Code(s): _____

Clinical Diagnosis: CKD ESKD FSGS HIV-nephropathy HTN-associated nephropathy
 Sickle cell nephropathy Other _____

Is this patient being considered as a living kidney donor? Yes No

Laboratory Values:

Creatinine levels Baseline _____ Current _____
Proteinuria Macro Micro None

Previous Genetic Testing: Yes No Gene(s)/Tests: _____
Result (if variants detected, please elaborate): _____

Has another family member already had genetic testing for this disease? Yes No
If yes, please describe and attach a copy of the genetic test lab report and pedigree.

FAMILY HISTORY

Family History: Yes No (Sketch below or attach pedigree if appropriate)

Paternal Ancestry: _____
Maternal Ancestry: _____
Consanguinity: Yes No

○ = Female □ = Male ◇ = Gender Unspecified
● ■ ◆ = Affected Individual ⊙ = Carrier

APOL1 Genotyping Test Information

Background Information:

- The APOL1 gene contains two risk alleles, termed G1 and G2, which are associated with increased risk of non-diabetic nephropathy.
- Non-diabetic nephropathy is an umbrella term for a variety of kidney disease without diabetes mellitus as the underlying cause and can lead to end-stage renal disease.
- The G1 and G2 alleles are present at high frequency in the African American population. They are mutually exclusive and present on separate chromosomes.
 - G1: APOL1, NM_003661.3, c.[1024A>G;1152T>G], p.[(Ser342Gly;Ile384Met)]
 - This variant is present at a frequency of 21% in African Americans.
 - G2: APOL1, NM_003661.3, c.1164_1169del, p.(Asn388_Tyr389del)
 - This variant is present at a frequency of 13% in African Americans.
- African Americans have a significantly increased rate of non-diabetic nephropathy compared to individuals of other ancestries, even after adjusting for socioeconomic status, lifestyle, and other health factors.¹
- APOL1 genotyping is an important consideration for kidney transplantation from living or deceased donors, as high-risk genotypes are associated with more rapid failure of transplanted kidneys and an increased risk for post-donation chronic kidney disease in living kidney donors.²

Inheritance Pattern:

- Risk of non-diabetic nephropathy due to the APOL1 risk alleles follows an autosomal recessive pattern.
- The presence of two risk alleles is associated with increased risk:
 - G1/G1
 - G1/G2
 - G2/G2
- Approximately 12% of African Americans have two APOL1 risk alleles and increased risk of kidney disease

What does this test include?

- This test determines the presence or absence of the G1 and G2 risk alleles in the APOL1 gene.
- This test is performed via Sanger sequencing of exon 6 of APOL1.

Who is this test indicated for?

- African Americans with kidney disease.
- African Americans being evaluated as a living kidney donor.

Test Outcomes:

- *Positive:*

- The presence of two risk alleles (either G1/G1, G1/G2, or G2/G2) indicates an increased risk of non-diabetic nephropathy.
- *Carrier:*
 - The presence of one risk allele indicates that the individual is not at increased risk of non-diabetic nephropathy, but other family members could be carriers or at increased risk.
- *Negative:*
 - The presence of zero risk alleles indicates that the individual is NOT at increased risk of non-diabetic nephropathy. For individuals with a diagnosis of nephropathy or chronic kidney disease, alternate etiologies should be considered.

References:

1. Freedman BI, Limou S, Ma L, Kopp JB. APOL1-Associated Nephropathy: A Key Contributor to Racial Disparities in CKD. *Am J Kidney Dis.* 2018 Nov;72(5 Suppl 1):S8-S16. doi: 10.1053/j.ajkd.2018.06.020. PMID: 30343724; PMCID: PMC6200346.
2. Mena-Gutierrez AM, Reeves-Daniel AM, Jay CL, Freedman BI. Practical Considerations for APOL1 Genotyping in the Living Kidney Donor Evaluation. *Transplantation.* 2020 Jan;104(1):27-32. doi: 10.1097/TP.0000000000002933. PMID: 31449181; PMCID: PMC6933073.