VASCULAR CONNECTIVE TISSUE DISORDERS, THORACIC AORTIC ANEURYSMS & AORTIC DISSECTIONS Requisition

Ship to:

Molecular Genetics Diagnostic Laboratory
Eastern Ontario Regional Genetics Program
401 Smyth Road, Rm w3401
Ottawa, ON, K1H 8L1
Tel: (613) 738-3230 Fax: (613) 738-4814
http://www.cheo.on.ca/en/moleculargenetics

Patient Name: _____
Last First Initial
Health Card Number: _____
DOB: (yy/mm/dd) _____
Address: _____
_____
Telephone: _____

Gender (circle one): Male Female

ALL SECTIONS MUST BE COMPLETED
Collection Date: _____
Collection Centre: _____
CHEO Pedigree Number: _____

Sample Requirements

Blood
☐ EDTA (lavender top) _____ ML room temp *(3 mL for infants 1 year or less; otherwise 2 X 5 mL)*
For any other sample types, please contact the laboratory directly.

Health Care Provider Requesting Test

Name: _____
Registration Number: _____
Address: _____
_____
Telephone: _____
FAX: _____

Copy to: Name: _____
Registration Number: _____
Address: _____
_____
Telephone: _____
FAX: _____

Test Requested (see next page for the clinical testing criteria and a list of the genes included in each panel)

□ Arterial Tortuosity syndrome *(SLC2A10)*
□ Marfan syndrome *(FBN1)*
□ Loeys-Dietz syndrome panel *(6 genes)*
□ Thoracic aortic aneurysms and aortic dissection panel (*11 genes)*
□ Single Gene Testing (Specify Gene): _____
□ Store DNA for future testing *(DNA will be stored for 2 years, then discarded; contact the laboratory if a longer storage term is required)*

☐ Family Variant Specific Test
(Include a copy of the family member's genetic test report)
Gene_____ Variant _____
Proband name: _____
Relationship to proband: _____

Clinical Information

Clinical Diagnosis: □ Marfan syndrome □ Loeys-Dietz syndrome □ Arterial tortuosity
□ Aortic dissection □ Thoracic aortic aneurysm
□ Unknown □ Unaffected □ Other_____

Clinical Features:
□ Aortic root dilation or aneurysm (Z: _____)
□ Vascular dissection or surgery (Age: ___ Location: _____)
□ Vascular dilation or aneurysm (Age: ___ Location: _____)
□ Bicuspid aortic valve
□ Joint hypermobility
□ Translucent skin
□ Mitral valve prolapse
□ Hypertelorism
□ Bifid uvula
□ Ascending aorta dilation or aneurysm
□ Arterial tortuosity
□ Pectus carinatum
□ Ectopia lentis
□ Dural ectasia

Other Features: _____

Ethnicity: (please be as specific as possible)
□ Ashkenazi Jewish □ Black/African □ East Asian □ European □ First Nations □ French Canadian
□ Hispanic □ Middle Eastern □ South Asian □ Other _____

Positive Family History □ Yes (specify below) □ No □ Unknown
_____
_____

VASCULAR CONNECTIVE TISSUE DISORDERS, THORACIC AORTIC ANEURYSMS & AORTIC DISSECTIONS TEST DETAILS

Clinical criteria for genetic testing:

1) Patient has a clinical diagnosis of the relevant condition
2) Patient does not have a diagnosis of the relevant condition, but clinical suspicion is strong
3) Patient has a family history of a pathogenic or likely-pathogenic variant; in this scenario, testing should consist of analysis for the familial variant only

Methodology of genetic testing:

1) Sequencing: analysis of coding sequences of the relevant genes and 10 base pairs immediately adjacent to each exon. This test is performed by oligonucleotide-based target capture (TruSight Cardio Sequencing kit, Illumina) followed by next generation sequencing using the MiSeq instrument (Illumina). Additional Sanger sequencing is performed for relevant regions that have insufficient coverage, and to confirm clinically significant variants and variants of unknown significance when applicable.
2) MLPA: to detect large genomic deletions and duplications, multiplex ligation-dependent probe amplification (MLPA) is performed for the relevant genes.

Arterial Tortuosity Syndrome
Gene tested: *SLC2A10*
Analysis includes sequencing as described above.

Marfan Syndrome
Gene tested: *FBN1*
Analysis includes sequencing and MLPA

Loeys-Dietz Syndrome Panel
Genes included in panel: *SMAD3, SMAD4, TGFB2, TGFB3, TGFBR1,* and *TGFBR2*
Analysis includes sequencing as described above, and MLPA of *TGFBR1* and *TGFBR2*

Familial Thoracic Aortic Aneurysms and Aortic Dissections Panel
Genes included in panel: *ACTA2, COL3A1, FBN1, MYH11, MYLK, NOTCH1, SLC2A10, SMAD3, TGFB2, TGFBR1,* and *TGFBR2*
Analysis includes sequencing as described above, and MLPA of *COL3A1, FBN1, TGFBR2,* and *TGFBR1*