



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

Ship to:

Molecular Genetics Diagnostic Laboratory
Eastern Ontario Regional Genetics Program
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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: _____	Copy to: Name: _____
Registration Number: _____	Registration Number: _____
Address: _____	Address: _____
_____	_____
Telephone: _____	Telephone: _____
FAX: _____	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*)
 - Loey-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 Loey-Dietz syndrome Arterial tortuosity
 Aortic dissection Thoracic aortic aneurysm
 Unknown Unaffected Other _____

Clinical Features:

<input type="checkbox"/> Aortic root dilation or aneurysm (Z: _____)	<input type="checkbox"/> Ascending aorta dilation or aneurysm
<input type="checkbox"/> Vascular dissection or surgery (Age: ____ Location: _____)	<input type="checkbox"/> Arterial tortuosity
<input type="checkbox"/> Vascular dilation or aneurysm (Age: ____ Location: _____)	
<input type="checkbox"/> Bicuspid aortic valve	<input type="checkbox"/> Mitral valve prolapse
<input type="checkbox"/> Joint hypermobility	<input type="checkbox"/> Hypertelorism
<input type="checkbox"/> Translucent skin	<input type="checkbox"/> Bifid uvula
	<input type="checkbox"/> Pectus carinatum
	<input type="checkbox"/> Ectopia lentis
	<input type="checkbox"/> 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*