

Laminopathies via *LMNA* Gene Sequencing (Test #347)

Brief Description: Lamin A/C (*LMNA*) codes for isoforms A and C of the protein lamin, a structural component of the nuclear membrane. Mutations in *LMNA* are known to cause at least 8 distinct clinical disorders (see for example Genschel and Schmidt *Hum Mut* 16:451-459, 2000).

Charcot-Marie-Tooth disease type 2B1, recessive
 (CMT2B1) OMIM 605588
 Dilated cardiomyopathy, dominant
 (CMD1A) OMIM 115200
 Dunnigan-type familial partial lipodystrophy, dominant
 (FPLD2) OMIM 151660
 Emery-Dreifuss muscular dystrophy, dominant
 (EDMD2) OMIM 181350

Emery-Dreifuss muscular dystrophy, recessive
 (EDMD3) OMIM 604929
 Hutchinson-Gilford progeria syndrome, *de novo*
 (HGPS) OMIM 176670
 Limb-girdle muscular dystrophy type 1B, dominant
 (LGMD1B) OMIM 159001
 Restrictive dermopathy, recessive
 (RD) OMIM 275210

Genetics: With the exceptions of EDMD3, CMT2B1 and RD, the laminopathies are inherited as autosomal dominant or *de novo* conditions. Mutations are distributed throughout the gene and, although all types of changes have been reported, the vast majority cause amino acid substitutions.

Description of This Particular Test: This test involves bidirectional DNA sequencing of all 12 exons of the *LMNA* gene found on chromosome 1q21. The full coding region of each exon plus ~50 bp of flanking non-coding DNA on either side are sequenced.

Reference Sequences: Genomic: NC_000001.9 mRNA and Protein: CCDS 1129.1

Indications for Test: Suspected diagnosis of any of the laminopathies.

Sensitivity of Test: Diagnosis of some laminopathies is complicated by genetic heterogeneity. Thus, a negative *LMNA* sequencing test may not rule-out a diagnosis of these disorders when classic clinical findings are present. In cases of RD, evaluation of the *ZMPSTE24* gene is also indicated (Navarro et al. *Hum Mol Genet* 13:2493-2503, 2004). Evaluation of muscle biopsy, if available, is a reasonable diagnostic approach to patients with symptoms suggesting muscle pathology.

Turn Around Time: Maximum of 40 days.

Specimen Requirements: See page 4 of the Requisition Form.

Price: Sequencing of complete coding regions of *LMNA* Gene **\$ 590**

CPT Codes:

Sample Ascertainment	83890	\$ 30	DNA Isolation	83891	\$ 40
Amplification x13	83898	\$ 160	Sequencing x13	83904	\$ 230
Separation	83894	\$ 50	Interpretation/Report	83912	\$ 80

Accreditation Info. CLIA ID #: 52D1027685 (expires 1/18/13) (CAP#: 7185561, AU ID: 1407125 expires 12/20/12)

Contact: Thomas L. Winder, PhD, FACMG, tom.winder@preventiongenetics.com; www.preventiongenetics.com