MYL3 gene encodes the myosin light chain 3, an alkali light chain has been referred as both the ventricular isoform and the slow skeletal muscle isoform in literature. MYL3 gene contains 6 coding exons and spans a genomic distance of about 24.3 kb which was mapped to chromosome 3p21.31. Mutations in MYL3 have been identified as a cause of mid-left ventricular chamber type hypertrophic cardiomyopathy, familial hypertrophic cardiomyopathy, 8 and MYL3-related familial hypertrophic cardiomyopathy. MYL3 mutations demonstrate autosomal dominant inheritance with a broad range of clinical severity both within and between families. Definitive genotype/phenotype correlations have not been described.

The John Welsh Cardiovascular Diagnostic Laboratory offers molecular genetic testing for MYL3 mutations. Individuals are tested by DNA sequencing of the coding exons of the MYL3 gene. We strongly recommend initial testing of a clearly affected individual, if available, in order to provide the greatest test sensitivity and clearest interpretation of results for subsequent family members. Genetic counseling is recommended for all individuals.

REASONS FOR REFERRAL

Molecular confirmation of the diagnosis of familial hypertrophic cardiomyopathy and MYL3-related familial hypertrophic cardiomyopathy.

METHODOLOGY

Genomic DNA is analyzed for MYL3 mutations by DNA sequencing of the coding exons of the MYL3 gene, as well as the exon/intron junctions and a portion of the 5’ and 3’ untranslated region. Patient DNA is sequenced in both the forward and reverse orientations. If a mutation is identified, additional family members are analyzed only for the familial mutation by automatic fluorescent DNA sequencing.

SERVICE FEES

<table>
<thead>
<tr>
<th>Direct and Institutional Billing</th>
<th>CPT Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index Case (Male or Female)</td>
<td>$600 per sample</td>
</tr>
<tr>
<td>Additional Family Members</td>
<td>$300 per sample; known familial mutation only</td>
</tr>
</tbody>
</table>

SENsitIVITY

DNA Sequencing Analysis: Approximately 99 percent detection of mutations in the coding exons 1-6 of MYL3.

SPECIMEN REQUIREMENTS

Blood (preferred): EDTA (purple-top) tubes: Adult: 5 cc Child: 5 cc Infant: 2-3 cc

Tissue: Frozen (preferred), RNALater

Other Body Fluids and Formalin-fixed, Paraffin-embedded Tissue: Call to inquire