Congenital Stationary Night Blindness: Sequencing Panel

Test Code: MM133
Turnaround time: 6 weeks
CPT Codes: 81404 x1, 81479 x1

Condition Description

Congenital stationary night blindness (CSNB) commonly refers to a non-progressive disorder with impaired night vision, reduced visual acuity, myopia, and defective dark adaptation (scotopic ERG defect) with usually normal appearance of the retina on fundus examination. CSNB may be inherited in an autosomal recessive, autosomal dominant, or X-linked manner. Please note, the GRK1 gene is not included on the NGS panel at this time as this gene is only partially annotated in hg19. GRK1 will be re-evaluated with the release of hg20.

References:

- OMIM
- GeneReviews

Genes

CABP4, CACNA1F, CACNA2D4, GNAT1, GPR179, GRM6, LRIT3, NYX, PDE6B, RBP4, RDHS, RHO, SAG, SLC24A1, TRPM1

Indications

This test is indicated for:

- Confirmation of a clinical diagnosis of CSNB.
- Carrier testing in adults with a family history of CSNB.

Methodology

Next Generation Sequencing: In-solution hybridization of all coding exons is performed on the patient's genomic DNA. Although some deep intronic regions may also be analyzed, this assay is not meant to interrogate most promoter regions, deep intronic regions, or other regulatory elements, and does not detect single or multi-exon deletions or duplications. Direct sequencing of the captured regions is performed using next generation sequencing. The patient's gene sequences are then compared to a standard reference sequence. Potentially causative variants and areas of low coverage are Sanger-sequenced. Sequence variations are classified as pathogenic, likely pathogenic, benign, likely benign, or variants of unknown significance. Variants of unknown significance may require further studies of the patient and/or family members.

Detection

Clinical Sensitivity: Unknown. Pathogenic variants in the promoter region, some pathogenic variants in the introns and other regulatory element pathogenic variants cannot be detected by this analysis. Large deletions will not be detected by this analysis. Results of molecular analysis should be interpreted in the context of the patient's clinical and/or biochemical phenotype.

Analytical Sensitivity: ~99%.

Specimen Requirements

Submit only 1 of the following specimen types

Type: Whole Blood

Specimen Requirements:

- In EDTA (purple top) tube:
  - Infants (2 years): 3-5 ml
  - Older Children & Adults: 5-10 ml

Specimen Collection and Shipping: Refrigerate until time of shipment. Ship sample within 5 days of collection at room temperature with overnight delivery.

Type: Isolated DNA

Specimen Requirements:

- In microtainer: 60 ug
- Isolation using the Qiagen™ Puregene kit for DNA extraction is recommended.

Specimen Collection and Shipping: Refrigerate until time of shipment in 100 ng/ul of TE buffer. Ship sample at room temperature with overnight delivery.

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Special Instructions

Please include fundus photographs, electroretinogram (ERG) findings, visual field findings, and visual acuity, if available, for expert review and clinical correlation with test results.

Related Tests

- Eye Disorders: Comprehensive Sequencing and Deletion/Duplication Panels.