

## Joubert Syndrome via *ARL13B* Gene Sequencing (Test #277)

**Brief Description of Clinical Features:** Joubert Syndrome (JS) (OMIM 213300) is marked by ataxia, hypotonia, abnormal eye movements, apraxia, neonatal respiratory anomalies, mental retardation, agenesis/hypoplasia of the cerebellar vermis and a brain malformation known as the "molar tooth sign" (MTS) on cranial MRI. MTS is considered to be the most characteristic diagnostic feature. JS patients have substantial phenotypic variation. Some JS patients develop retinal dystrophy and/or progressive renal failure. For more information, see Parisi and Glass (Gene Reviews, [www.genetests.org](http://www.genetests.org), 2007).

**Genetics:** JS is inherited in an autosomal recessive manner. Two missense and one nonsense causative mutations in the *ARL13B* gene have been reported to date in two families (Cantagrel et al. Am J Hum Genet 83:170-179, 2008). JS has also been linked to mutations in the *AH11*, *CEP290*, *MKS3*, *CC2D2A*, *NPHP1*, and *RPGRIP1L* genes. PreventionGenetics performs tests for all of these genes.

**Description of This Particular Test:** This test involves bidirectional sequencing using genomic DNA of all 10 coding exons (exons 1-10) of the *ARL13B* gene. The full coding region of each exon plus ~50 bp of flanking non-coding DNA on either side are sequenced. We will also perform sequencing of any single or pair of exons for family members of patients with known mutations and to confirm previous results (\$190-340).

**To support research and because development of this test was funded by the NIH, we ask that a completed Clinical Feature Checklist, which is available from our web site, accompany each test requisition. Checklists are not required for carrier testing.**

**Reference Sequences:**                    **Genomic: NC\_000003.10**      **mRNA and Protein: CCDS 2925.1**

**Indications for Test:** Patients with symptoms consistent with JS, particularly those who have been tested and found to be negative for other, more commonly mutated Joubert genes, are candidates. Conclusive connections between clinical features and mutated genes have not yet been made.

**Sensitivity of Test:** Mutations in *ARL13B* appear to be a minor cause of Joubert Syndrome, accounting for perhaps 2% of cases (Cantagrel et al. Am J Hum Genet 83:170-179, 2008).

**Turn Around Time:** Maximum of 40 calendar days, although many tests are completed in 20-30 days.

**Specimen Requirements:** See page 4 of the Requisition Form.

<b>Price:</b>	<b>Sequencing of <i>ARL13B</i></b>	<b>Exons 1-10</b>	<b>\$ 640</b>
<b>CPT Codes:</b>			
Sample Ascertainment x1	83890 \$ 30	DNA Isolation x1	83891 \$ 40
Amplification x10	83898 \$ 170	Sequencing x10	83904 \$ 260
Separation x1	83894 \$ 60	Interpretation/Report x1	83912 \$ 80

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

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