ARUP LABORATORIES
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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB	2/9/2003
Gender:	Male
Patient Identifiers:	01234567890ABCD, 012345
Visit Number (FIN):	01234567890ABCD
Collection Date:	00/00/0000 00:00

Charcot-Marie-Tooth Type 1A (CMT1A)/Hereditary Neuropathy with Liability to Pressure Palsies (HNPP), PMP22 Deletion/Duplication

ARUP test code 2012160

Charcot-Marie-Tooth/HNPP DelDup Specimen	Whole Blood

Charcot-Marie-Tooth/HNPP DelDup Interp

Negative

TEST PERFORMED - 2012160
TEST DESCRIPTION - Charcot-Marie-Tooth Type 1A (CMT1A)/Hereditary Neuropathy with Liability to Pressure Palsies (HNPP), PMP22 Deletion/Duplication
INDICATION FOR TESTING - Confirm Diagnosis
RESULT
No pathogenic variants were detected in the PMP22 gene.

INTERPRETATION
No pathogenic variants were detected in the PMP22 gene by deletion/duplication analysis. This individual is predicted to be unaffected with Charcot-Marie-Tooth disease type 1A (CMT1A); however, this result does not exclude the diagnosis of other subtypes of Charcot-Marie-Tooth type 1 (CMT1). Additionally, this result decreases the likelihood of, but does not exclude, a diagnosis of hereditary neuropathy with liability to pressure palsies (HNPP), as PMP22 sequence variants causative for HNPP are not detected by this test. Please refer to the background information included in this report for the clinical sensitivity and limitations of this test.

RECOMMENDATIONS
Medical screening and management should rely on clinical findings and family history. This test does not detect all variants associated with CMT1 or HNPP, as only a subset of causative variants are large PMP22 deletions/duplications. If clinical suspicion for a hereditary neuropathy remains, testing of other associated genes is recommended. Genetic consultation is recommended.

COMMENTS
Reference Sequence: GenBank # NM_000304.3

This result has been reviewed and approved by [redacted]

H=High, L=Low, *=Abnormal, C=Critical

BACKGROUND INFORMATION: Charcot-Marie-Tooth 1A (CMT1A)/ Hereditary Neuropathy with Liability to Pressure Palsies (HNPP), PMP22 Deletion/Duplication

CHARACTERISTICS: Charcot-Marie-Tooth disease, type 1A (CMT1A) is a subtype of CMT1, a hereditary neuropathy characterized by demyelinating progressive distal motor and sensory neuropathy, muscle weakness and atrophy, pes cavus foot deformity, and other findings. CMT1A is caused by duplication of the PMP22 gene. Hereditary neuropathy with liability to pressure palsies (HNPP) is a neurological disorder characterized by repeated focal pressure neuropathies and peripheral neuropathy caused by deletion of the PMP22 gene.

INCIDENCE: CMT1A- 1/10,000; HNPP 1/20,000-1/50,000.

INHERITANCE: Autosomal dominant; 10-20 percent of PMP22 duplications are de novo.

CAUSE: CMT1A is caused by a 1.5 Mb duplication at 17p11.2 including the PMP22 gene, while HNPP is caused by the reciprocal deletion of the same region.

CLINICAL SENSITIVITY: 70-80 percent for CMT1; 80 percent for HNPP.

METHODOLOGY: Multiplex ligation-dependent probe amplification (MLPA) of the PMP22 gene.

ANALYTICAL SENSITIVITY AND SPECIFICITY: 99 percent.

LIMITATIONS: Diagnostic errors can occur due to rare sequence variations. Single base pair substitutions, small deletions/duplications, regulatory region mutations, and deep intronic mutations are not detected. The breakpoints of large deletions/duplications are not determined.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online.

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Charcot-Marie-Tooth/HNPP DelDup Specimen	22-194-400279	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Charcot-Marie-Tooth/HNPP DelDup Interp	22-194-400279	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00

END OF CHART

H=High, L=Low, *=Abnormal, C=Critical