

Using Genetic Testing to Identify Mutations in *PTPN11* as the Cause of Pulmonic Stenosis

Indications:

- Congenital heart defect in children with at least one other characteristic symptom of Noonan syndrome
- Family history of Noonan syndrome

Benefits:

- Genetic testing for Noonan syndrome can:
 - identify Noonan syndrome as the cause of congenital heart defects.
 - alert patients and physicians to the risk of other Noonan-syndrome associated manifestations.
 - allow family screening for Noonan syndrome, facilitating early diagnosis in family members of patients.

Background:

- Noonan syndrome has an estimated incidence of 1:1000 to 1-2,500 and leads to congenital heart defects in about 50% of affected individuals.^{1,2}
- Cardiac abnormalities most often associated with Noonan syndrome are pulmonary valve stenosis and hypertrophic cardiomyopathy, but atrial and ventricular septal defects, branch pulmonary artery stenosis, tetralogy of Fallot, coarctation of aorta, and coronary aneurysms have also been reported.²
- Other characteristic features of Noonan syndrome include dysmorphic craniofacial features, an unusual chest shape, proportionate short stature, cryptorchidism (in males), mild retardation, coagulation defects, spinal deformities, and an increased risk of JMML.²
- Autosomal dominant gain-of-function mutations in the gene *PTPN11* account for about 50% of all cases of Noonan syndrome and most of the cases associated with pulmonary valve stenosis and are associated with an increased risk for JMML.³⁻⁷

References: 1. Nora JJ, et al (1974) Am J Dis Child 127:48-55. 2. Allanson JE. GeneReviews. <http://genetests.org> 3. Tartaglia M, et al., (2001) Nat Genet 29:465-8. 4. Tartaglia M, et al., (2002). Am J Hum Genet 70:1555-63. 5. Yoshida R et al (2004) J Clin Endocrinol Metab 89:3359-64. 6. Jongmans M et al (2005) Am J Med Genet 134A:165-170. 7. Tartaglia M, et al (2003) Nat Genet 34:148-150.

Ordering Information: please see other side

Ordering Information for the *PTPN11* DNA Sequencing Test

Indications for Testing

- Congenital heart defect in children with at least one other characteristic symptom of Noonan syndrome
- Family history of Noonan syndrome

Ordering Information

Gene(s)	CPT Codes	Test Code
<i>PTPN11</i>	83891(1) 83892(1) 83898(15) 83904(30) 83909(30) 83912(1)	190201

Family Testing (single amplicon)

<i>PTPN11</i>	83891(1) 83892(1) 83898(1) 83904(2) 83909(2) 83912(1)	190201
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Test Methodology

- Amplification by polymerase chain reaction (PCR); sequencing of entire protein-coding region

Sample Requirements

- For blood samples:
 - 2 mL whole blood in EDTA tube (lavender top)
 - Samples can be stored briefly at 4°C, but should be shipped on day of collection.
- For buccal swab samples:
 - Please contact client services at 1-866-647-0735 for instructions.
- All sample types should be shipped overnight at room temperature.
- To request a sample shipping kit, please call 1-866-647-0735.

Turn-around Times

Turn-around times typically range from 7 to 21 days of receipt of sample and all required forms, but may vary depending on test volume and test-specific technical difficulties. Current TATs are posted on our website. Please schedule patient follow-up appointments for discussion of test results conservatively at 6 weeks.

For more information, please contact Correlagen Diagnostics, Inc., at 1-866-647-0735 or visit us on the web at www.correlagen.com.