Disproportionate Short Stature: Deletion/Duplication Panel

Test Code: MD171
Turnaround time: 2 weeks
CPT Codes: 81228 x1

Condition Description

Skeletal dysplasias are a heterogeneous group of more than 450 disorders with complex mechanisms. Clinical and biochemical features continue to be used reliably to assign patients to this general disease category. Identification of the precise genetic defect is important; however, to permit carrier testing and early prenatal diagnosis. Molecular analysis is likely to expand the clinical spectrum of skeletal dysplasia and may also provide data relevant to prognosis and future therapeutic intervention.

Collectively, the incidence of skeletal dysplasia is estimated to be 1 in 5,000 births. Skeletal dysplasia is referred to as generalized disorders of cartilage and bone, frequently resulting in disproportionate short stature. A variety of complications can be associated with skeletal dysplasias, including orthopedic, neurologic, auditory, visual, pulmonary, cardiac, renal, and psychological.

References:

Genes

ACP5, ANKH, ANOS, B3GALT6, BMPR1B, CANT1, CDKN1C, CHST14, CHST3, COL10A1, COL11A1, COL11A2, COL1A1, COL2A1, COL9A1, COL9A2, COL9A3, COMP, CTSK, CUL7, DDR2, DHCPR2, DYM, DYNC2H1, EIF2AK3, EVC, EVC2, EXT1, EXT2, FAM20C, FBN1, FGFR1, FGFR2, FGFR3, FLNA, FLNB, GDF5, GDF6, GLI3, GPC6, HSPG2, ICK, IFT122, IFT140, IFT80, IHH, KIF22, LIFR, MATN3, MMP13, MMP9, NEK1, NEX6, NPR2, OBSL1, PAPPS2, PCNT, PPRK1A1, PTH1R, PTN11, ROR2, RUNX2, SH3PXD2B, SHOX, SLC26A2, SLC35D1, SLC39A13, SMARCAL1, SOX9, SULF1, TBCE, TCTN3, TRIP11, TRPS1, TRPV4, WDR35, WNT5A

Indications

This test is indicated for:
- Short stature with abnormal radiographic findings.

Methodology

Deletion/Duplication Analysis: DNA isolated from peripheral blood is hybridized to a gene-targeted CGH array to detect deletions and duplications. The targeted CGH array has overlapping probes that cover the entire genomic region.

Please note that a “backbone” of probes across the entire genome are included on the array for analytical and quality control purposes. Rarely, off-target copy number variants causative of disease may be identified that may or may not be related to the patient's phenotype. Only known pathogenic off-target copy number variants will be reported. Off-target copy number variants of unknown clinical significance will not be reported.

Detection

Deletion/Duplication Analysis: Detection is limited to duplications and deletions. The CGH array will not detect point or intronic mutations. Results of molecular analysis must be interpreted in the context of the patient's clinical and/or biochemical phenotype.

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: Ship sample at room temperature with overnight delivery.

**Type: Isolated DNA**

Specimen Requirements:

In microtainer: 10 ug

*Isolation using the Qiagen\textsuperscript{TM} 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.

**Special Instructions**

Please include radiographic findings for expert review at Emory Genetics Laboratory.

**Related Tests**

- Disproportionate Short Stature: Sequencing Panel
- Skeletal Dysplasia: Sequencing Panel