Molecular Genetics Service Profile
Otospondylomegaepiphyseal dysplasia (OSMED)

Introduction

◊ OSMED (MIM 215150) is an autosomal recessive disorder characterized by sensorineural hearing loss, enlarged epiphyses, disproportionate shortness of the limbs, and abnormalities in vertebral bodies. Other typical findings include: cleft palate, small chin (Robin sequence), mid-face hypoplasia with short upturned nose and depressed nasal bridge.

◊ Mutations in *COL11A2* have been reported to cause OSMED and a related, phenotypically milder disorder, Weissenbacher Zweymüller syndrome (WZS). Most OSMED cases appear to be caused by mutations in *COL11A2*. It is not currently known if *COL11A2* mutations are major causes for WZS.

◊ Genotype-phenotype correlations: Most mutations characterized in OSMED have been loss of function mutations (Melkoniemi et al. 2000). Only one mutation, a heterozygous glysine substitution in *COL11A2* have been reported in WZS (Pihlajamaa et a. 1998).

Contact details for the laboratories carrying out the genetic test for OSMED
Dept of Medical Biochemistry and Molecular Biology, University of Oulu, Aapistie 7 90220 Oulu, Finland.
http://www.biocenter.oulu.fi/projects/mannikkoalakokko.html
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Reasons for referral

◊ Mutation analysis in patients for confirmation of a clinically suspected diagnosis of OSMED. Screening for unknown mutations is labour intensive, therefore we cannot accept urgent referrals of this type.

◊ Evaluation of at-risk relatives for management reasons and genetic counselling. In this case the mutation in the index case must be known.

◊ Prenatal diagnosis is not offered.

Samples

◊ Minimum 100μg of genomic DNA from peripheral lymphocytes (or cultured cells) from your local laboratory. Blood samples (minimum of 5ml in EDTA) can also be sent to our laboratory by express mail (DHL/FedEx//TNT/UPS).

Technical

◊ Mutation scanning of exons 1-66 of *COL11A2* by fluorescent bidirectional sequencing.

Target turn-round time

◊ Mutation scanning of *COL11A2* – 20 weeks. Routine, single mutation test - 4 weeks. Turn-round times are from the receipt of all required samples and information, including appropriate clinical information and radiographs. Relevant clinical-radiographic expertise is currently offered at no cost through the use of the secure online submission system (the **ESDN Case Manager**). Testing is only performed after clinical and radiographic evidence has been reviewed using the **ESDN Case Manager**. To obtain a username and password for the **ESDN Case Manager** please email info@esdn.org.

Cost

◊ Full mutation screen €2800.

References

◊ Vikkula *et al*. (1995) *Cell* **80**: 431-437.

◊ Pihlajamaa *et al*. (1998) *Am J Med Genet* **80**: 115-120.

◊ Melkoniemi *et al*. (2000) *Am J Hum Genet* **66**: 368-377.

ESDN Administrator contact details

◊ Email: info@esdn.org Website: www.esdn.org

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