INTRODUCTION

*WNT5A* encodes a 380 amino acid secreted cysteine-rich glycoprotein localised to chromosome 3p14 and is involved in both the canonical and noncanonical signalling pathways controlling essential developmental pathways. Mutations in *WNT5A* are associated with **autosomal dominant Robinow syndrome (DRS1)**.

Robinow syndrome is a genetically heterogeneous disorder characterized by mesomelic limb shortening associated with facial and genital abnormalities. *WNT5A* mutations reported to date are loss-of-function missense mutations affecting highly conserved cysteine residues. Based on one pedigree penetrance appears to be high.

There is a recessive form of Robinow syndrome which has a similar phenotype to the dominant form but with more severe rib and spine abnormalities and in sporadic cases these conditions can be difficult to differentiate. Molecular analysis of *ROR2* associated with the recessive form of this disorder is available (see separate information sheet). Exclusion of *ROR2* mutations is recommended for isolated cases prior to *WNT5A* analysis. *WNT5A* has been shown to interact with *ROR2*.

TESTING

- **Diagnostic:** Clinically affected patients
- **Familial mutation test:** Relatives of clinically affected patients (known mutation)
- **Prenatal:** At risk of having an affected child (known mutation)

REFERRALS

- From Geneticists, Paediatricians, Antenatal Services, Neurologists, Endocrinologists or Dysmorphologists
- Prenatal referrals must be discussed with the laboratory and, where possible, arranged in advance.

STRATEGY AND TECHNICAL INFORMATION

- For new diagnostic cases:
  - bi-directional sequencing analysis of the 5 coding exons (5 amplicons) of *WNT5A*
  - Multiplex Ligation-dependent Probe Amplification (MLPA) to detect deletions/duplications.

TARGET REPORTING TIMES

- **Diagnostic test:** 40 days
- **Familial mutation test:** 10 days
- **Prenatal test (includes maternal contamination check):** 3 days

N.B. Details are correct for the date of printing only – last updated 18/08/2015