Clinical Background and Genetics

- Alternative name: Focal Segmental Glomerulosclerosis (FSGS)
- SRNS is a disease of kidney filtration, resulting in massive and unremitting protein loss into the urine. It is managed with heavy immunosuppression, but despite this the majority of patients eventually suffer irreversible kidney failure.
- Diagnosis is made clinically, and it is now clear the disease segregates into genetic and non-genetic forms.
- SRNS is defined as:
  - Presence of nephrotic syndrome (Serum albumin < 25g/l and urine albumin > 4 mg/m2/h or urine albumin/creatinine ratio >100 mg/mmol), that is either:
    1) resistant to treatment with steroids, or
    2) present in the first 3 months of life, or
    3) has a histological picture of FSGS on biopsy.

Service offered

- 16* genes are targeted using a custom designed HaloPlex Target Enrichment System kit and sequenced using a MiSeq (Illumina) analyser. Analysis is performed using an open source in-house pipeline (alignment: BWA; alignment modification and variant calling: GATK; variant annotation: Annovar).
  - *Genes include: ACTN4, APOL1, ARHGAP24, CD2AP, COQ2, COQ6, INF2, LAMB2, LMX1B, MYO1E, NPHS1, NPHS2, PLCe1, PTPRO, TRPC6 and WT1.
  - An extended assay to include >30 SRNS associated genes is currently under service development.
- Familial tests are available for known mutations using Sanger sequencing.

Quality

- BGL participates in the EMQN scheme for DNA sequencing.

Referrals

Referrals are accepted nationally from Consultant Nephrologists and Consultant Clinical Geneticists only.

Target reporting Time and Cost (where appropriate)

- Diagnostic screen of 16 genes: 20-30 days
- Known Mutation: 10 days (by Sanger sequencing)
- Urgent: 3 days

Please contact the laboratory for up to date prices.

Clinical Advice

If clinical discussion is required we would recommend contact with:
Prof. Moin A Saleem FRCP, PhD, Professor of Paediatric Renal Medicine, University of Bristol. Email: m.saleem@bristol.ac.uk

References