Bristol Genetics Laboratory

North Bristol NHS Trust

Cockayne Syndrome (CS)

Contact details:
Bristol Genetics Laboratory
Pathology Sciences
Southmead Hospital
Bristol, BS10 5NB
Enquiries: 0117 414 6168
FAX: 0117 414 6464
Email: nbn-tr.geneticsenquiries@nhs.net

Head of department:
Eileen Roberts FRCPath

Consultant Lead for Molecular Genetics:
Maggie Williams FRCPath

Service Lead:
Laura Yarram-Smith
Email: laura.yarrram@nbt.nhs.uk

Sample Required:

Adult: 5mls blood in EDTA
Paediatric: at least 1ml EDTA (preferably >2ml)

Samples should be accompanied by a FULLY completed request form (available as download at www.nbt.nhs.uk/genetics or from the laboratory).

Please include details of test, family history, address and POSTCODE, NHS number, referring clinician and unit/hospital.

Consent and DNA Storage:

All genetic testing requires consent. It is the responsibility of the referring clinician to ensure that appropriate consent has been obtained.

DNA is stored from **all** patients unless consent for this is specifically denied.

Stored samples may be used for quality assurance purposes and may be used anonymously for the development of new tests for the disorder in question.

Clinical Background and Genetics

Cockayne Syndrome (CS) is an autosomal recessive neurodegenerative disorder characterised by progressive growth failure, microcephaly, mental retardation, retinal degeneration, sensorineural deafness, and photosensitivity. CS has a variable rate of progression. The spectrum of CS phenotypes can be divided into three general clinical presentations:

Cockayne Syndrome type I: "Classic" CS (early-onset) in which the major features of the disease become apparent by one or two years of age. This is the most common type.

Cockayne Syndrome type II: A more severe and less common form of the disorder with abnormalities recognised at birth or in the early neonatal period.

Cockayne Syndrome type III: Milder/later-onset forms that are still poorly defined.

Cockayne Syndrome has been associated with mutations in two genes; *ERCC6* (also known as *CSB*) and *ERCC8* (also known as *CSA* or *CKN1*).

Service offered

- Full gene screening of *ERCC6* by direct sequence analysis, this includes all 21 exons (includes non-coding exon 1) and extends to the upstream putative branch site and downstream splice sites. 75% of mutations of CS mutations are identified in *ERCC6*.
- Full gene screening of *ERCC8* by direct sequence analysis (for patients negative after *ERCC6* analysis), this includes the coding exons (1-12) and extends to the upstream putative branch site and downstream splice sites. 25% of mutations of CS mutations are identified in *ERCC8*.
- Familial tests for known mutations.
- The *ERCC6* and *ERCC8* genes are also included in a 62 gene panel for chromosome breakage syndromes. This panel also includes the genes *ERCC1*, *ERCC2* and *ERCC5* which have been implicated with disorders phenotypically similar to Cockayne Syndrome. Please contact the laboratory for further information on this service.

Quality

- This is a UKGTN approved service. BGL participates in the EMQN scheme for DNA sequencing.

Referrals

- Referrals are accepted nationally from clinical Geneticists only. Please contact the laboratory for up to date prices.

Target reporting Time

Diagnostic screen of each gene	*56 days*
Gene panel testing	*112 days*
Known Mutation	*14 days*
Screening for 2 known mutations	*14 days*
Prenatal/urgent	*3 days*

References

Laugel, V., *et al*. (2010) Mutation update for the CSB/ERCC6 and CSA/ERCC8 genes involved in Cockayne syndrome. Hum Mut. 31(2): 113-126.

Information document No.65 Version 5
Active date of this version 25/08/2016
DETAILS CORRECT AT DATE OF PRINTING ONLY.
Approved by: Laura Yarram-Smith

Exceptional healthcare, personally delivered

CPA
Accredited Medical Laboratory
Reference No: 2907