



# Genetic Testing Request Form – Whole Genome Sequencing (WGS)

NW GLH (Manchester & Liverpool), Manchester Centre for Genomic Medicine (MCGM)



North West

NHS Genomic Laboratory Hub

## Patient Details

## Referring Clinician

NGIS Code (if known):

Consultant (in full):

Surname:

Hospital (in full):

Forename:

Department:

Tel:

DoB:

NHS No:

Email:

Sex:

Hospital No:

Address:

Postcode:

### Consent Statement:

A complete Patient Choice form must be received by the laboratory before WGS can be initiated.

## Sample Information

## WGS Test Type Requested

High Infection Risk?

☐ Yes ☐ No

Date Taken:

Blood Tube Requirements

EDTA Tube

☒ Whole Genome Sequencing

☐ Adult: 3-5ml

☐ Paediatric: >3ml

☐ Infant: 1-3ml

☐ Bone Marrow

Sample Type:

Other

☒ Whole Genome Sequencing

☐ Tumour Tissue

☐ Saliva

☒ DNA STORED  
(Until NGIS Referral Received)

- Solid tissue, specify sub type & anatomic site

☐ Rare Disease

☐ Proband

☐ Family Member (Please provide below the, Name & DoB of the Proband)

Proband name

Proband dob (DD/MM/YYYY)

☐ Cancer

☐ Germline Sample

☐ Tumour Sample

Neoplastic cell content

%

Pathology sample ref no

For tumour samples please provide the Pathology sample ref, the neoplastic cell content of the sample submitted and include a copy Pathology report

Sample Taken By:

Guidance notes shown over page

## NW GLH Laboratory use ONLY

Date:

Duty Scientist:

Barcode

Routine

Fast Track

Urgent

High Risk:

Yes

No

Not stated

DNA database test code:

iGene test indication:

Duty Scientist comments (with date and initials):

DNA extraction:

Yes

No

Cell culture:

Yes

No

Return to pre-analytical:

Yes

No

Sample condition (extraction):

Sample condition (culture):

Blood: EDTA Li-Hep Blood spot Other:

Blood: Li-Hep EDTA Other:

No. tubes: <1ml: Y / N Spare: Y / N

Culture: standard w/o NSU

Setup:

Check:

DNA vol.: µl mouth wash mouth swab

Prenatal: AF CV Other

AR aliquot:

Check:

Prenatal: AF CV cultured cells

AF cultures: 2 4 None

Setup:

Check:

Fresh tissue type:

CV: cyto backup export

Sorted:

Check:

Fixed tissue Path #:

Transport media #:

Weight:

Check:

wax block unstained slides:

If sent away, amount:

Setup:

Check:

shavings: stained slides: marked: Y / N

Tissue type:

cutting (operator): cutting (checker):

TC cultures

Setup:

Check:

Chemagen

COBAS (specify):

QF-PCR: 13,18,21 X&Y No

Taken:

Check:

iGENatal

EZ1 (specify):

Confirmatory QF-PCR:

Taken:

Check:

Technical comments (with date and initials):

Previous linked sample numbers:

Tech (check):

Tech (transfer):



**Director of Laboratories:**

**Dr A Wallace PhD FRCPATH**

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Telephone: 0161 276 6506

**NW GLH (Manchester)**

Manchester Centre for Genomic Medicine (MCGM)

Manchester University NHS Foundation Trust

6th Floor, Saint Mary's Hospital,

Oxford Road, Manchester, M13 9WL

## General Sample Guidance Notes

### Germline Sample Requirements

**High Infection Risk:** In accordance with current regulations, the laboratory must be informed of any infection risk associated with submitted samples.

The sender has the responsibility for minimising the risk to laboratory staff by giving sufficient information to enable the laboratory to take appropriate safety precautions when testing a specimen.

**Peripheral Blood:** Sufficient blood needs to be taken to ensure the required quantities of DNA can be extracted. A minimum of 2µg of DNA is required for WGS and sufficient DNA is retained locally for any required validation.

For patients who have received a blood transfusion, the timeline from last blood product transfusion to WGS blood sample collection will be dependent upon the patient's white cell count prior to transfusion and the type of blood product transfused. As a guide, it is recommended to wait at least 2 weeks following a transfusion before a sample is collected.

For patients who have received a bone marrow transplant a peripheral blood sample shall not be taken for DNA extraction. Suitable alternative sample types are either pre-bone marrow transplant stored DNA which had been extracted from blood or DNA extracted from cultured fibroblasts.

In neonates, acutely ill children and other patients where venepuncture is challenging, clinical discretion should be applied to the volume of blood.

- **Peripheral Blood (EDTA tubes only):**
  - Adult: 3-5ml
  - Paediatric: >3ml
  - Infant: 1-3ml
  - Preferred tube types: BD Vacutainer or Sarstedt Micro Tube

**Tissue:** For fibroblast cultures for individuals who have undergone bone marrow transplantation or circumstances where other options such as stored DNA are unavailable.

**Saliva:** In exceptional circumstances, where considered clinically appropriate and if no fresh or stored blood or fibroblast derived DNA is available. Saliva samples can be collected with GeneFiX or Oragene kits.

**Transport/ Storage:** Transport immediately to the laboratory, ideally transported refrigerated or in cool boxes. It is acceptable to send samples at ambient temperature if the transportation time does not exceed 72 hours. If not transported immediately (stored overnight or over the weekend) peripheral blood and bone marrow samples should be stored at +4°C following collection.

**Sample Packaging:** The sample container should be sealed in a biohazard bag in case of a leakage. To prevent contamination of referral form and paperwork this should not be sealed with the sample. All packaging should conform to UN650 standards (as applied to UN3373 – Biological Samples, Category B).

### Tumour Tissue Requirements

#### Formalin fixed tissue is unsuitable for WGS

The amount of tissue required for DNA extraction varies depending on tissue cellularity and can be reduced by regions of necrosis or haemorrhage.

Typical sample quantities adequate to achieve sufficient DNA for WGS (2µg):

- 5mm x 5mm x 2mm of tumour tissue
- 15mm x 2mm needle core biopsy

Neoplastic cells must account for at least 30% of the nucleate cells present in the tissue sample submitted for WGS and the sample should have less than 20% necrosis by area. Macrodissection may be required to generate a suitable sample.

Tumour content may be assessed on:

1. A frozen section of the tissue to be submitted
2. A FFPE mirror block of the sample to be submitted
3. A FFPE sample of an area surrounding small punch biopsies frozen from the tumour for submission

Personnel involved in the assessment of sample tumour content should participate in the GenQA pilot on-line tumour assessment programme (Tissue-i) [www.genqa.org](http://www.genqa.org)

### Tumour Sample Transport & Labelling

It is essential that samples/containers are adequately labelled and fit for purpose. All sample containers must be labelled with a minimum of 3 unique identifiers that can be cross referenced with this completed request form. Please use an indelibly printed label where possible, if not information should be printed clearly using an indelible marker. Samples must be accompanied by a complete WGS request form and a copy of the current Pathology report relevant to a tumour sample.

Tumour samples must be packed in a clean, watertight, shatterproof, single use container manufactured under a sterile environment e.g. Universal tube. Do not add saline, transport solution or other fluids to the sample container, as they affect WGS.

Samples should be despatched as soon as possible as the patient's treatment is dependent on the results of Genomic analysis.

Samples must be transported frozen e.g. on dry ice in temperature controlled packaging. Ensure that the temperature controlled packaging is suitable for the coolant used and correctly labelled in accordance with shipping regulations.

Sample delivery should be trackable/ traceable. Please contact the NW GLH for advice if required.

More detailed sample handling guidance is available at:  
<https://www.genomicsengland.co.uk/about-genomics-england/the-100000-genomes-project/information-for-gmc-staff/sample-handling-guidance/>

### Delivery Address

**Sample Reception, Genomic Medicine,  
6th Floor, Saint Mary's Hospital,  
Oxford Road, Manchester,  
M13 9WL, United Kingdom**

### GDL Contact Details

**Laboratory Opening Hours:** 09:00 – 17:30, Monday to Friday

**email:** [mft.genomics@nhs.net](mailto:mft.genomics@nhs.net)

**DO NOT** email patient, personal identifiable, confidential or sensitive information to the NW GLH without secure encryption.

**Telephone:** 0161 276 6122