

# Guide to referring for Whole Genome Sequencing (WGS) for Solid Tumours

## Before referring:

- Check patient is eligible for WGS and select appropriate M code using the National genomic test directory for cancer <https://www.england.nhs.uk/publication/national-genomic-test-directories/>
- Discuss patient feasibility and eligibility at MDT.

## Referral Process:

1. Fill in a Record of Discussion with the patient <https://southeastgenomics.nhs.uk/wp-content/uploads/2021/04/GMS-WGS-RoD-Pilot-April-2021.pdf>
  - o Information sheets available for patients here:
    - WGS [https://southeastgenomics.nhs.uk/wp-content/uploads/2020/12/Patient\\_Information\\_Cancer\\_v2.2.pdf](https://southeastgenomics.nhs.uk/wp-content/uploads/2020/12/Patient_Information_Cancer_v2.2.pdf)
    - National Genomic Research Library: [https://southeastgenomics.nhs.uk/wp-content/uploads/2020/12/Patient\\_Information\\_Research\\_V1.3.pdf](https://southeastgenomics.nhs.uk/wp-content/uploads/2020/12/Patient_Information_Research_V1.3.pdf)
2. Complete interventional radiology / surgery request with specific request for tissue to be **fresh frozen, and not to be placed in formalin.**
3. Request an EDTA blood sample.
4. Member of the clinical team to complete sections highlighted in yellow on the Test Order Form (details below).
5. Member of the pathology team will sample tumour appropriately for WGS and snap-freeze (OCT, iso-pentane cooled in dry ice/ LN2 (store in freezer at -80C)).  
Frozen section slide reviewed by histopathology team to confirm tumour and tumour cellularity.
6. Member of the pathology team to complete sections highlighted in blue on the Test Order Form.
7. Completed Test Order Form and Record of Discussion emailed to [gst-tr.wgs@nhs.net](mailto:gst-tr.wgs@nhs.net) with CANCER WGS NHS Number: XXX XXX XXXX in the subject.
8. Frozen tissue, blood sample and TOF sent to Guy's Hospital (Synnovis Genetics Laboratory, 5th Floor Tower Wing, Guy's Hospital, London SE1 9RT) on dry ice and DNA Duty Tech Lead emailed to inform the sample is on its way: [DNADutyTechLead@viapath.co.uk](mailto:DNADutyTechLead@viapath.co.uk)
  - a. The sample should ideally be sent with a morning courier, Monday-Thursday)

NHS Genomic Medicine Service, WGS Test Request Cancer, October 2022 v1.19 to be used for WGS go-live.  
This document is subject to version control and is regularly updated. Please confirm you are using the current version by contacting your local Genomic Laboratory Hub

Genomic Medicine Service		Whole Genome Sequencing (WGS) Test Request PLEASE DO NOT USE FOR NON-WGS TESTS		CANCER	
Requesting organisation:		GLH laboratory to receive sample:		Test Required Whole Genome Sequencing	
Patient first name		Patient last name		Ethnicity	
Date of birth (dd/mm/yyyy)		Hospital number		Test Directory Clinical Indication & code (cancer type & sub-type) <small>The clinical indications listed at the bottom of the pick list under 'NEW INDICATIONS' are not live for all NHS GLHs. Please check with GLHs prior to ordering.</small>	
Gender <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Other		Postcode		Presentation status <input type="checkbox"/> First diagnosis <input type="checkbox"/> Recurrence / Relapse <input type="checkbox"/> Unknown	
NHS number Reason NHS Number not available: <input type="checkbox"/> Patient not eligible for NHS number (e.g. foreign national) <input type="checkbox"/> Other (provide reason):		Additional clinical information (if required) <small>E.g. previous tumours, molecular testing, and relevant treatment history with data(s)</small>			
Solid tumour requests only <input type="checkbox"/> Primary <input type="checkbox"/> Metastatic <input type="checkbox"/> Unknown <input type="checkbox"/> Lymphoma		Histopathology Lab ID		Additional tumour information (if relevant) <small>E.g. site of metastasis (if metastatic), or unknown primary</small>	
Date of this diagnosis (dd/mm/yyyy)		Tumour topography		Tumour morphology	
Haemato-oncology liquid tumour requests only <input type="checkbox"/> AML <input type="checkbox"/> ALL <input type="checkbox"/> Other (please specify):		SIHMDS Lab ID		Date of this diagnosis (dd/mm/yyyy)	
Complete for tumour samples (being sent to GLH DNA extraction lab) <input type="checkbox"/> Fresh frozen tumour <input type="checkbox"/> Bone marrow <input type="checkbox"/> Blood (EDTA) <input type="checkbox"/> Other (please specify):					
% malignant nuclei / blasts or equivalent in this sample (refer to sample handling guidance) must be provided below					
Sample ID		Collection date / time		% Malignant nuclei / blasts <small>If BM/PB provide volume and nucleated cell count</small>	
Complete for germline samples (being sent to GLH DNA extraction lab) <input type="checkbox"/> Blood (EDTA) <input type="checkbox"/> Saliva <input type="checkbox"/> Fibroblasts <input type="checkbox"/> Skin biopsy <input type="checkbox"/> Other (please specify):					
Sample ID		Collection date / time		Sample volume if applicable Comments	
Responsible consultant Name: Department address: Phone: Email:		Main contact (if different from responsible consultant) Name: Department address: Phone: Email:			

Have attached a copy of the Record of Discussion form  
 Patient conversation taken place; Record of Discussion form to follow

Requesting organisation: **Your hospital**  
GLH laboratory to receive sample: **South East GLH**

Providing ethnicity ensures that there is equity of access to genetic testing in the wider population and it also helps us to improve variant analysis and interpretation. Please select from the drop-down options.

Please select the appropriate M code using the drop-down options. If you need further guidance, please refer to the National Genomic Test Directory.

Please provide details of family history of cancer, details of any treatment including radiotherapy and previous chemotherapy, any concurrent or previous tumour

Important to include an NHS number as required for the WGS pipeline. If no NHS number is available a reason will need to be provided.

Please indicate whether the sample is: 'Primary, Metastatic, unknown, Lymphoma'. Please also indicate date of first diagnosis.  
**Histopathology Lab ID: this is based on patient and surgery**

**Sample ID:** this is based on the particular block or sample. **Collection date / time:** when the tissue was removed. **% Malignant nuclei / blasts:** invasive malignant nuclei must account for at least 30% of the nuclei present in the tissue sample submitted for WGS. There should also be less than 20% necrosis.

Please add details of the germline sample (EDTA) if you have these details.

The 'responsible contact' should be filled in by the consultant who the report should be sent to, 'main contact' should have the histopathologist details.