

Reflex NTRK molecular testing for soft tissue sarcoma

This standard operating procedure is aimed for guidance of the specialist pathology team with greater Manchester working within GMOSS MDT.

Recent advances in understanding the genetic landscape of soft tissue sarcoma have resulted in the development of new targeted therapies for a small sub-set of patients. Identification of actionable molecular alterations, such as *NTRK* mutations, now allow for the use of targeted therapies that can expand treatment options and improve outcomes.

High-quality diagnostic biopsies remain critical, not only for histological diagnosis, but also to enable comprehensive molecular testing and potentially access to targeted therapies.

Testing at diagnosis will increase the ability for eligible patients to be able to access these target therapies when required in a timely manner. This will also reduce the amount of re-examination of tissue required by pathology and the need to obtain archived tissue.

Radiologists/Endoscopists/Surgeons

Soft tissue sarcoma suspected by Radiologists/Endoscopist/Surgeons carrying out a biopsy



Core Needle or excision biopsy performed
(cytology brushings alone inadequate for molecular testing)

Pathologists

Soft tissue sarcoma confirmed by GMOSS pathology on biopsy or resection



NGS Sarcoma panel including *NTRK* fusion requested by pathology
cc report to pathologist and responsible clinician.



Results of genomic testing will be returned to the pathology department and supplemented into the diagnostic histopathology report including negative *NTRK* results.



Histopathology report including supplemental NGS Sarcoma panel results must be forwarded to the referrer

- If soft tissue sarcoma is confirmed, the following should be requested: *NGS Sarcoma panel including NTRK* should be requested. The request form can be found on the [NW GLH website](#) by clicking through the following: **Documents and Forms – Test request forms – Cancer Solid Tumour – Tumour Request Form**
- Sample requirements can be found on the request form. Once prepared, the sample and form should be sent to the NW GLH in Manchester (address can be found on the request form)

Eligibility for NTRK molecular testing for soft tissue sarcoma

Please note: this list is based on the Test Directory v10 published in October 2024 and is subject to change. The latest test directory can be accessed [here](#) and should be checked regularly. The amended list below is also not exhaustive.

Excluded Diagnoses

Bone Sarcoma

Desmoid-Type Fibromatosis

Giant cell tumour

Eligible sarcoma subtypes for NTRK testing include:

- Leiomyosarcoma
- Well/ de-differentiated liposarcoma
- Pleomorphic liposarcoma
- Undifferentiated pleomorphic sarcoma
- Myxofibrosarcoma
- MPNST
- Spindle cell sarcoma
- Undifferentiated sarcoma NOS
- Angiosarcoma
- Round cell sarcoma NOS
- Epithelioid sarcoma
- GIST wildtype for KIT and PDGFRA mutation

NB not an exhaustive list

Example form for NTRK molecular testing for soft tissue sarcoma (not version controlled, latest version on website)

[NW GLH website](#) for up-to-date link to request form.

Paediatric/Sarcoma/Other Tumour Test Request Form
North West Genomic Laboratory Hub (MANCHESTER), Manchester Centre for Genomic Medicine (MCGM)

Patient Details
 Surname: _____
 Forename: _____
 DOB: _____ NHS No: _____
 Sex: _____ Hospital No: _____
 Address/Postcode: _____

Payment Status: ☐ NHS ☐ Private

Referring Clinician
 Consultant (in full): _____
 Hospital (in full): _____
 Department: _____ Tel: _____
 Email: _____
 Copy request to (if applicable): _____

CLINICAL DETAILS
 Pathology Laboratory Hospital/Trust: _____
 Pathology block/sample no.: _____
 Sampling Date: _____
PLEASE COMPLETE AND FORWARD TO THE PATHOLOGY LABORATORY HOLDING THE SAMPLE.

CI Code*	Clinical Indication Name	Test Name	Test Code	Please tick
Various	Paediatric Tumours	BRAF hotspot	-	
M119	Paediatric Tumours	NGS panel	-	
Various	Paediatric Tumours	Fusion panel (please state gene(s) of interest)	-	
Various	Paediatric Tumours	FISH (please state gene(s) of interest) (separate H&E slide required for this test)		
Various	Sarcoma	Fusion panel (please state gene(s) of interest)	-	
Various	Sarcoma	FISH (please state gene(s) of interest) (separate H&E slide required for this test)		
All indications	NTRK fusions	Please state tumour type	-	
-	Other tumour type – please state	Gene(s) of interest please state	-	

*For full details of genes covered see national genomic cancer test directory (<https://www.england.nhs.uk/publication/national-genomic-test-directories/>).
 NB For WGS, FISH, CNS and ctDNA testing please see: <https://mft.nhs.uk/nwglh/test-information/cancer/solid-tumour/sample-requirements/referral-form/>

PATHOLOGY LABORATORY – please complete
 Please note 2 tubes of curls are required for all testing. For sample requirements please see reverse or <https://mft.nhs.uk/nwglh/>.
 Please circle or state the approximate neoplastic cells (%) in the sample sent for analysis (this information is important in reducing the risk of false negative results).

1-5 ^a	6-10 ^a	11-20 ^a
20-50	50-75	>75

Overall neoplastic cell content _____% *Neoplastic cells in marked area _____%

^aWhere overall neoplastic cell content <20% and macrodissection would enhance % of neoplastic cells please send slide mounted sections with corresponding marked H&E stained slide.

