

The Royal Marsden
NHS Foundation Trust



SOLID TUMOUR CYTOGENETICS SERVICE USER'S MANUAL



UKAS Accredited Laboratory
Reference No: 8444

The Clinical Cytogenetics Laboratory

Introduction:

The Clinical Cytogenetics Laboratory provides a diagnostic Cytogenetic service for acquired (oncology) chromosome abnormalities for haematological malignancy and solid tumours. This document refers principally to the solid tumour service.

a) Key Staff and contact details:

Head of Laboratory: Julie Howard-Reeves, BSc, FRCPath. julie.howard-reeves@icr.ac.uk

Head of Solid Tumour Section: Marianne Wall, BSc Dip ACC marianne.wall@icr.ac.uk

Telephone: 020 8722 4232/ 4213 Central Laboratory and Fax

Group email: cytogenetics@icr.ac.uk

b) Location of Laboratory:

The laboratory is located in the McElwain Building, which is adjacent to the Royal Marsden Hospital, on its Sutton site.

c) Service offered:

The laboratory provides FISH (Fluorescence in-situ hybridisation) analysis for solid tumour referrals.

d) Hours:

The laboratory's formal hours are 9am to 5.30pm, Monday to Friday. However, it is generally occupied from 8am to 6pm.

e) Out of hours service:

The Cytogenetics Laboratory does not operate a routine out of hours analysis and reporting service. It may be possible to undertake analysis for exceptionally urgent clinical referrals but only if sufficient notice has been given so that arrangements can be made for suitable staff to attend, as the laboratory does not have an on-call provision.

For urgent samples likely to arrive outside of the normal working hours, please notify the laboratory in advance. Such samples should be sent by courier to the RMH switchboard and enclosed in packaging that is clearly marked "Urgent" and "Please contact Cytogenetics".

f) Specimen Request Form:

Samples must be accompanied by a completed request form, preferably the integrated SIHMDS request form that is also used for immunophenotyping histology and molecular diagnostics. Local forms are acceptable so long as they provide the minimum information:

- The patient's name, date of birth, and the NHS and/or Hospital number;
- The type of sample;
- If unfixed, the date the sample was taken;
- The required test clearly indicated;
- A named contact in case of enquiry.

The sample must have at least two forms of ID that match the ID on the request form.

g) Sample transportation:

Samples for cytogenetic studies should be sent directly to the laboratory:

RMH SIHMDS Laboratories
Clinical Cytogenetics Laboratory
The Centre for Molecular Pathology
The Royal Marsden NHS Foundation Trust
Cotswold Road
Sutton, Surrey SM2 5PT

FFPE samples awaiting transportation can be kept at ambient temperature.

Transport and packaging of samples should be done following the sender's policy for safe transport of pathological specimens. See HSE guidance at <http://www.hse.gov.uk/biosafety/biologagents.pdf>

h) Advice and interpretation of results:

Reports normally contain an interpretation of the result. If further advice or interpretation is required, please contact one of the senior staff in the laboratory on 020 8722 4232. For clinical advice, please contact the appropriate consultant via RMH switchboard.

i) Referral elsewhere:

The laboratory does not refer samples elsewhere. If there is a request for an extremely rare FISH study using probes that are not routinely stocked here, then the laboratory can offer advice of which lab would perform the test.

j) Laboratory repertoire:

The laboratory undertakes FISH tests by reason for referral and as requested by the referring Histopathologist.

The laboratory keeps stocks of the commercially-available, commonly-required DNA probes for Solid Tumour FISH studies.

Including: Lung cancer, sarcomas, nodular fasciitis, inflammatory myofibroblastic tumour, lipomatous tumours and germ cell tumours

k) Exclusions:

If molecular diagnostics have a positive result by QF-PCR FISH testing will be discontinued unless requested otherwise.

l) Specimen requirements:

The preferred tissue is an FFPE section cut to 1-2µm thickness and mounted on positively charged microscope slides along with an H&E slide with the area of interest clearly marked. Two FFPE slide is required for each FISH probe required to allow the option of repeating the FISH study should hybridisation fail.

m) Criteria for accepting/rejecting samples:

The laboratory reserves the right to reject all unlabelled samples. In view of the difficulty of replacing some samples, they may be processed and an analysis attempted. The report will indicate that the sample was

unlabelled / incorrectly labelled and will state that the decision to act on the report resides with the referring clinician.

n) Reporting times:

FISH studies: the initial processing takes three days for FFPE sections. Professional guidelines state that 95% of high-priority samples should be reported within 14 calendar days, and 95% of standard-priority samples within 21 days. In practice, most samples are reported well within these times, depending on the tests required. Some very urgent results can be obtained within 5 working days.

If a result is needed for a particular date, please notify this date in advance to the laboratory and every effort will be made to meet it.

o) Factors affecting success rate/results:

The most common causes for failing to obtain a FISH result are –

- Delay in receiving sample
- Inadequate size of section
- Inappropriate sample
- Hybridization failure

Note also that a result depends on the level of tumour infiltration in the material supplied for study.

See also the comments in section **g**, above.

p) Quality assurance:

The laboratory participates in all the relevant UK Quality Assessment Schemes for cytogenetics, and Performance Certificates are available upon request. It is accredited to UKAS standard ISO15189.

q) Time limits for further tests:

Requests for additional tests or a change to the tests on the request form can be accommodated in cases where the appropriate FFPE slides are provided. The request of additional FISH tests may require more slides to be cut and forwarded to the lab.

Note: This material is not available for research unless all the appropriate written consents and ethical clearances have been obtained.

r) Other studies: Haematological Malignancy

The laboratory provides a service for diagnostic studies of haematological malignancy, please refer to the SIHMDS user guide for further details.