NPM1 Mutation Status

TRIAL No:252603 **Participant:** **ISSUED:** 04/03/2026 **CLOSING:** 02/04/2026

Please find enclosed 2 vials containing lyophilised cell line derived material for *NPM1* exon 11 (historically exon 12) Mutation Status analysis. Sample ID (approximate total white cell count):
NPM1 185 (7 x10^6)
NPM1 186 (7 x10^6)

There is also an additional third vial containing an educational whole genome amplified DNA sample for NPM1 exon 11 (historically exon 12) mutation status analysis (see sample stability, storage and processing section for further information). Please process the sample according to your standard protocol. Sample ID (volume and concentration):
NPM1 Edu I (20 µL of whole genome amplified (WGA) DNA at 89.2ng/µL in 1x TE)

This molecular haemato-oncology programme provided by UK NEQAS LI is open to any appropriate DNA/RNA based approaches. UK NEQAS LI does not endorse any particular testing platform/methodology. However, where a particular input material or approach may increase the chances of an erroneous result, we will communicate this in the trial report.
Wherever possible, please ensure that you treat the samples as routine specimens, adhering to standard operating procedures and local quality control (QC). Details of methodologies used should be included in your results submission. Please note that results from all methods are performance monitored collectively, and not by individual methodological approaches, however, results may be considered by method in tables and figures for information only. **Nucleic acid extraction from the External Quality Assessment (EQA) material provided may benefit from minimal adaptations to your current methodology (see guidance below).** There are no specific environmental conditions that need to be considered when testing this EQA material.

SAMPLE STABILITY, STORAGE AND PROCESSING

Whilst the EQA sample(s) provided should ideally be stored at 2-8°C, they are expected to remain stable at typical ambient temperatures for the duration of transit, even for extended transit periods. However, if samples appear to have visibly deteriorated or do not pass local QC, please contact UK NEQAS LI to arrange repeat samples - see below for details.

Lyophilised (freeze dried) material has the advantage of improved stability. However, inherent differences to fresh patient samples means that making slight modifications to your extraction protocol may further improve resultant nucleic acid quality and yield. **Always store lyophilised samples at 2-8°C in their stable lyophilised state until you are ready to proceed with nucleic acid extraction - Do not reconstitute and store.**

General guidance is provided below for the most widely used nucleic acid extraction methodology principles. UK NEQAS LI are in no way endorsing the use of any particular manufacturer's reagent(s)/kit in the advice given.

RNA - Phenol-chloroform based techniques (e.g. TRIzol), Silica binding columns (e.g. Qiagen RNeasy) and Magnetic bead based extraction methods (e.g. Roche MagNA Pure):
Add the calculated volume of phenol reagent or lysis buffer directly to the lyophilised material in the glass vial in which the sample is provided. Initially it may appear difficult to homogenise but will do so following a 2-5 minute incubation period at room temperature with gentle pipetting (there is no requirement for vortexing). Proceed with the rest of your protocol (also see additional advice below). **It is likely that a high yield of RNA will be achieved. We therefore advise that extracted RNA is quantified in order to optimise the amount inputted into cDNA synthesis reaction.**

DNA - Various methods:
Subject to extraction technique it may be possible to add the calculated volume of lysis buffer directly to the lyophilised material in the glass vial in which the sample is provided. Alternatively, the lyophilised sample(s) may be reconstituted with 1mL RNase/DNase free water. The sample will reconstitute with gentle pipetting (there is no requirement for vortexing). The sample now forms a suspension of leucocytes and can be processed from an appropriate point in your chosen extraction protocol (also see additional advice below).

Additional advice - applicable to many methods:
Lyophilised samples do not require a red cell lysis step. Even if they appear red, any red cells originally present in the specimen will have already lysed during the freeze-drying process.

It is important to always take account of the cell numbers in the sample(s) stated above. Please note the approximate white cell counts are ascertained prior to lyophilisation, some cell loss is acknowledged during the freeze-drying process. **You may need a larger volume of reagent(s) or smaller amount of sample than routinely used for patient samples**; cell line samples are often highly expressing and/or polyploid. If you are applying the sample to a column or cartridge it is important take account of the maximum capacity of the column/cartridge; please read the manufacturer's information carefully. **Reconstituted sample(s) must be processed immediately.**

Reducing the number of cells can be facilitated by diluting the sample (after its initial reconstitution with 1mL RNase/DNase free water) using phosphate buffered saline (1x PBS). Centrifuge the determined volume of the cell suspension at 500-600*xg* to pellet the leucocytes. Remove the supernatant and proceed with the nucleic acid extraction process as per laboratory protocol, ensuring that the cell pellet is thoroughly homogenised in your chosen buffer.

The DNA/RNA extracted should be subjected to local quality control procedures (e.g. spectrophotometry). If the extracted nucleic acid does not meet local quality control procedures a repeat sample should be requested as soon as possible (see the section below for guidance on requesting a repeat sample).

Please do contact us (see contact details section) if you require any additional support optimising your standard nucleic acid extraction protocol for lyophilised material.

Whole genome amplified material: Educational sample information: Please store samples at 2-8°C and avoid freeze thawing. The DNA should be subjected to local quality control and clean up procedures. Samples have been subject to extraction on the Chemagen 360 system and sample NPM1 Edu I has been subject to whole genome amplification so may contain nucleotides and primers. If the extracted nucleic acid does not meet local quality control procedures a repeat sample should be requested as soon as possible (see the section below for guidance on requesting a repeat sample). Spin the tubes briefly prior to use to ensure all contents are at the bottom of the tube.

Materials used in the production of samples for UK NEQAS LI EQA programmes are obtained from a variety of sources. In all cases these materials (patient samples, cell lines, blood products etc) are provided under the conditions that they be used only for the educational purpose of EQA. **Participants must only use the samples provided for the purpose intended**. UK NEQAS LI, Sheffield Teaching Hospitals NHS Foundation Trust and any of its employees will not be responsible for any misuse of samples issued in this programme.

COSHH (Control of Substances Hazardous to Health): The cell preparations utilised by this trial are human derived and judged as having a minimal likelihood that pathogens are present. They have been virologically tested at authentication and found negative for Epstein-Barr virus (EBV), Hepatitis B (HBV), Hepatitis C (HCV), Human Immunodeficiency Virus (HIV), Human T-cell Leukaemia virus I/II, Murine Leukaemia Virus (MLV) and Squirrel Monkey retrovirus (SMRV). Samples may contain antibiotics (penicillin and streptomycin) and an antimycotic (amphotericin B). No material is knowingly used that is positive for pathogens. However, it should be handled in accordance with local laboratory Health & Safety practices. The nucleic acid supplied is not known to contain any agents capable of harm; it should be handled in accordance with local laboratory Health & Safety practices.

Packaging: UK NEQAS LI sample(s) are sent by first class post or courier accordingly. Packaging is guided by Package Instruction P650.

Disposal/Spillage: The sample(s) cannot be assumed to be free from infectious agents therefore the material should be assessed as potentially infectious (refer to COSHH). If found to be damaged the packaging and sample(s) should be disposed of in accordance with local Health & Safety and waste management practices. It is advised that any spillage of reconstituted material should be dealt with in line with the local protocol for small volume blood spills. If no specific protocol is available, UK NEQAS LI suggests liberally covering the area with a suitable disinfectant (allowing sufficient contact time for effective action), absorbing the treated spillage with a paper towel before rinsing the area with water and drying thoroughly. See the section below for guidance on requesting a repeat sample.

REPEAT SAMPLES

Requests for repeat samples should be made by email (repeatsamples@ukneqasli.co.uk). Should this not be possible please telephone our Administration team on the number provided below. **Please make a repeat sample request as soon as possible. If following repeat sample(s) processing, results obtained still do not pass local internal QC please contact UK NEQAS LI.**

RESULTS SUBMISSION

The data entry webpage for this trial can be accessed online at the UK NEQAS LI website via the **Participant Hub** (www.ukneqasli.co.uk). Participants are required to log into this area of the website using their Lab number (also known as PRN, participant reference number), Identity and Password.

Please only submit results applicable to the scope of this EQA programme.

Please note there is a(n) separate educational sample questionnaire for this trial distribution; the relevant link out to JotForm is provided on the UKNEQAS LI data entry webpage. Alternatively, please go to https://form.jotform.com/UKNEQASLI/252603NPM1

UK NEQAS LI website hosted results submission pages have been designed to facilitate local independent checking of trial results prior to final submission. Once data has been entered into the relevant fields a participant can chose to click the [Save] button to permit independent checking by a second operative before final submission to UK NEQAS LI. The date and time will appear in the corresponding field to indicate data has been successfully saved. Subsequent editing of the data fields is still possible at this stage. **The [Submit] button must be clicked for data to be locked (preventing further editing) and transferred to UK NEQAS LI.** The date and time will appear in the corresponding field to indicate the trial data has been successfully submitted. Additionally, the date of successful results submission will also appear in the 'completed' column of the relevant programme trial list. Please note, all data **saved** or submitted in the UK NEQAS data entry system will be downloaded and analysed at trial closure.

For results returned via the Participant Hub using an externally hosted data entry system (e.g. Survey Monkey, JotForm) the UK NEQAS LI website functionality outlined above is unfortunately not currently available. Participants are encouraged to carefully read and follow the instructions provided on the individual results submission pages.

Please note, all numerical fields must be completed using only decimal points to separate numbers, and not commas (e.g. enter 6.3 not 6,3).

If you experience any problems submitting your trial results, please do contact us (see contact details section) for assistance. Participants can make changes to existing laboratory contact details, request a password reminder or add a new contact at any time via the Participant Hub. Alternatively, please email (admin@ukneqasli.co.uk) or telephone the number provided below for assistance.

If you wish to return more than one set of results, please contact UK NEQAS LI. **Failure to return your results will be recorded as a non-return and for an accredited programme impact upon your performance status.** If you have any queries with regards to online data entry, please do not hesitate to contact us. It is the responsibility of participants to ensure that their results have been received by UK NEQAS LI. Further information can be found in the associated trial issue email and on our website (www.ukneqasli.co.uk).

REPORT DISTRIBUTION

The trial report for this programme will be available online at the UK NEQAS LI website (www.ukneqasli.co.uk). Participants are required to log into the **Participant Hub** (using their web user details) to retrieve PDF report(s). Participants will be notified regarding the availability of an issued report by email. To ensure you receive such emails please check the contact details we hold for your laboratory are accurate and current at re-registration. Participants can make changes to existing laboratory contact details, request a password reminder or add a new contact at any time via the Participant Hub. Alternatively, please email (admin@ukneqasli.co.uk) or telephone the number provided below for assistance.

CONTACT DETAILS

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Please state PRN (participant reference number) on all correspondence.