

NATIONAL STANDARD METHOD

**OPERATION OF THE
ROCHE MAGNA PURE LC
AUTOMATED NUCLEIC ACID
EXTRACTION ROBOT**

VSOP 36

Issued by Standards Unit, Evaluations and Standards Laboratory
Centre for Infections



UK Clinical Virology Network

Association of Medical Microbiologists
Association of Medical Microbiologists
Association of Medical Microbiologists



OPERATION OF THE ROCHE MAGNA PURE LC AUTOMATED NUCLEIC ACID EXTRACTION ROBOT
Issue no: 2 Issue date: 02.05.06 Issued by: Standards Unit, Evaluations and Standards Laboratory Page no: 1 of 17
VSOP 36i2

This SOP should be used in conjunction with the series of other SOPs from the Health Protection Agency

www.evaluations-standards.org.uk

Email: standards@hpa.org.uk

STATUS OF NATIONAL STANDARD METHODS

National Standard Methods, which include standard operating procedures (SOPs), algorithms and guidance notes, promote high quality practices and help to assure the comparability of diagnostic information obtained in different laboratories. This in turn facilitates standardisation of surveillance underpinned by research, development and audit and promotes public health and patient confidence in their healthcare services. The methods are well referenced and represent a good minimum standard for clinical and public health microbiology. However, in using National Standard Methods, laboratories should take account of local requirements and may need to undertake additional investigations. The methods also provide a reference point for method development.

National Standard Methods are developed, reviewed and updated through an open and wide consultation process where the views of all participants are considered and the resulting documents reflect the majority agreement of contributors.

Representatives of several professional organisations, including those whose logos appear on the front cover, are members of the working groups which develop National Standard Methods. Inclusion of an organisation's logo on the front cover implies support for the objectives and process of preparing standard methods. The representatives participate in the development of the National Standard Methods but their views are not necessarily those of the entire organisation of which they are a member. The current list of participating organisations can be obtained by emailing standards@hpa.org.uk.

The performance of standard methods depends on the quality of reagents, equipment, commercial and in-house test procedures. Laboratories should ensure that these have been validated and shown to be fit for purpose. Internal and external quality assurance procedures should also be in place.

Whereas every care has been taken in the preparation of this publication, the Health Protection Agency or any supporting organisation cannot be responsible for the accuracy of any statement or representation made or the consequences arising from the use of or alteration to any information contained in it. These procedures are intended solely as a general resource for practising professionals in the field, operating in the UK, and specialist advice should be obtained where necessary. If you make any changes to this publication, it must be made clear where changes have been made to the original document. The Health Protection Agency (HPA) should at all times be acknowledged.

The HPA is an independent organisation dedicated to protecting people's health. It brings together the expertise formerly in a number of official organisations. More information about the HPA can be found at www.hpa.org.uk.

The HPA aims to be a fully Caldicott compliant organisation. It seeks to take every possible precaution to prevent unauthorised disclosure of patient details and to ensure that patient-related records are kept under secure conditions¹.

More details can be found on the website at www.evaluations-standards.org.uk. Contributions to the development of the documents can be made by contacting standards@hpa.org.uk.

Please note the references are now formatted using Reference Manager software. If you alter or delete text without Reference Manager installed on your computer, the references will not be updated automatically.

Suggested citation for this document:

Health Protection Agency (2006). *Operation of the Roche MagNA Pure LC automated nucleic acid extraction robot*. National Standard Method VSOP 36 Issue 2.
http://www.hpa-standardmethods.org.uk/pdf_sops.asp.

INDEX

STATUS OF NATIONAL STANDARD METHODS.....	2
INDEX.....	3
AMENDMENT PROCEDURE.....	5
SCOPE OF DOCUMENT.....	6
INTRODUCTION.....	6
1 SAFETY CONSIDERATIONS.....	8
1.1 SPECIMEN COLLECTION.....	8
1.2 SPECIMEN TRANSPORT AND STORAGE.....	8
1.3 SPECIMEN PROCESSING.....	8
2 SPECIMEN COLLECTION.....	8
2.1 OPTIMAL TIME OF SPECIMEN COLLECTION.....	8
2.2 CORRECT SPECIMEN TYPE AND METHOD OF COLLECTION.....	8
2.3 ADEQUATE QUANTITY AND APPROPRIATE NUMBER OF SPECIMENS.....	8
3 SPECIMEN TRANSPORT AND STORAGE.....	8
3.1 TIME BETWEEN SPECIMEN COLLECTION AND PROCESSING.....	8
3.2 SPECIAL CONSIDERATIONS TO MINIMISE DETERIORATION.....	8
4 EQUIPMENT AND REAGENTS.....	9
4.1 EQUIPMENT.....	9
4.2 REAGENTS.....	9
5 PROCEDURE.....	10
5.1 TEST SELECTION.....	10
5.2 CULTURE AND INVESTIGATION.....	10
5.3 IDENTIFICATION.....	13
6 QUALITY ASSURANCE.....	13
7 LIMITATIONS.....	13
8 REPORTING PROCEDURE.....	14
8.1 REPORTS.....	14
8.2 REPORTING TIME.....	14
9 REPORTING TO THE HPA (LOCAL AND REGIONAL SERVICES AND CDSC CENTRE FOR INFECTIONS).....	14
10 ACKNOWLEDGEMENTS AND CONTACTS.....	14
APPENDIX 1: PRE-TREATMENT OF CLINICAL SPECIMENS.....	15
APPENDIX 2: SUMMARY OF THE RECOMMENDATIONS FROM EVALUATIONS.....	16
APPENDIX 3: STORAGE OF EXTRACTS.....	18
REFERENCES.....	19

AMENDMENT PROCEDURE

Controlled document reference	VSOP 36
Controlled document title	Operation of the Roche MagNA Pure LC automated nucleic acid extraction robot

Each National Standard Method has an individual record of amendments. The current amendments are listed on this page. The amendment history is available from standards@hpa.org.uk.

On issue of revised or new pages each controlled document should be updated by the copyholder in the laboratory.

Amendment Number/ Date	Issue no. Discarded	Insert Issue no.	Page	Section(s) involved	Amendment
2/ 02.05.06	1.1	2	9	Procedure	Reworded and updated

OPERATION OF THE ROCHE MAGNA PURE LC AUTOMATED NUCLEIC ACID EXTRACTION ROBOT

Types of specimens: Blood
Serum
Plasma
Tissue

The procedure and extraction kits used are dependent on the type of clinical specimens and nucleic acid to be extracted. Pre-treatment may be required for some clinical specimens.

SCOPE OF DOCUMENT

This SOP describes the operation of the Roche MagNA Pure LC automated nucleic acid extraction robot.

INTRODUCTION

Background²

The Roche MagNA Pure LC is an instrument capable of performing both automated nucleic acid isolation and polymerase chain reaction (PCR) set-up. The extraction is based on proven magnetic bead technology resulting in high quality nucleic acid, free from cross-contamination. For the isolation of DNA and RNA proprietary magnetic glass particles are used. Isolation of mRNA is performed with biotin-labelled oligo-(dT) and streptavidin-coated magnetic particles. It processes up to 32 samples in a single run in approximately one hour, requiring minimal preparation time. All reagents required are ready-to-use and are supplied as MagNA Pure LC nucleic acid isolation kits together with protocols pre-installed in the software. Kits are available to process a variety of samples including blood, serum, plasma and tissue.

Since filtration, centrifugation or any other manual steps are completely eliminated, coupled with the absence of vacuum pumps or tubing, the risk of cross-contamination is minimal. The instrument stage can be cleaned with DNA Zap™ (alternative anti nuclease reagents are currently under investigation by Roche) and decontaminated with a built-in-UV-lamp.

Reagents are filled into nuclease-free disposable reagent tubs and samples are loaded into sample cartridges. Sample order and other details of the batch are entered into a prepared chart on the sample order screen. Reagent volumes and number of reaction tips needed for the run are calculated by the software and manual steps are clearly pointed out and cross-checked by the software. All subsequent steps are performed automatically with specially designed nuclease-free disposable reaction tips that are used for the transfer of samples, as well as acting as "reaction vials" for the magnetic bead separation of nucleic acids, washing steps, and elution of nucleic acids from magnetic beads into a cooled sample cartridge. Used reaction tips are automatically discarded into an attached autoclavable waste bag and liquid is pipetted into the appropriate container at the end of the run.

The instrument has been designed to offer a seamless process of extraction, PCR set-up and real-time PCR in conjunction with the Roche LightCycler™, where it can load the PCR reaction mixes directly into the LightCycler™ capillaries already placed in the LightCycler™ carousel. In addition, for other PCR instruments or downstream processes it is extremely flexible and can be completely customised by the user for set-up in most PCR reaction vials and 96-well plates.

The choice of the extraction kit is dependent on the organism, sample type and downstream process. Refer to the MagNA Pure LC Guidance Notes and Final Evaluation reports for recommendations.

OPERATION OF THE ROCHE MAGNA PURE LC AUTOMATED NUCLEIC ACID EXTRACTION ROBOT

Issue no: 2 Issue date: 02.05.06 Issued by: Standards Unit, Evaluations and Standards Laboratory Page no: 5 of 17
VSOP 36i2

This SOP should be used in conjunction with the series of other SOPs from the Health Protection Agency

www.evaluations-standards.org.uk
Email: standards@hpa.org.uk

1 SAFETY CONSIDERATIONS³⁻¹³

1.1 SPECIMEN COLLECTION

Appropriate hazard labelling according to local policy.

1.2 SPECIMEN TRANSPORT AND STORAGE

Compliance with current postal and transportation regulations is essential.

1.3 SPECIMEN PROCESSING

- Refer to current guidelines for the Hazard group(s) of potential pathogens likely in each specimen
- Refer to current guidance on the safe handling of pathogenic micro-organisms
- Do not touch the surface of the heating block, as an immediate burn may be sustained

1.3.1 CHEMICAL HANDLING

When using DNA Zap™ wear nitrile gloves, safety glasses and work in a fume cupboard.

The guanidinium hydrochloride/ethanol mixed MagNA Pure waste should be collected in labelled containers and stored under secure conditions for waste disposal.

The above guidance should be supplemented with local COSHH and risk assessments

2 SPECIMEN COLLECTION

2.1 OPTIMAL TIME OF SPECIMEN COLLECTION

Specimens should be collected according to normal laboratory practice

2.2 CORRECT SPECIMEN TYPE AND METHOD OF COLLECTION

NA

2.3 ADEQUATE QUANTITY AND APPROPRIATE NUMBER OF SPECIMENS

NA

3 SPECIMEN TRANSPORT AND STORAGE

3.1 TIME BETWEEN SPECIMEN COLLECTION AND PROCESSING

NA

3.2 SPECIAL CONSIDERATIONS TO MINIMISE DETERIORATION

Where appropriate samples should be sent in a transport medium. When there is a delay in processing, samples should be refrigerated or stored at -70°C if the delay exceeds 24 hrs.

4 EQUIPMENT AND REAGENTS

4.1 EQUIPMENT

- Roche MagNA Pure LC system
- Roche MagNA Pure LC reagent reservoir rack
- Cooling block
- Forceps

MagNA Pure LC plastics from Roche

- Small reagent tubs
- Medium reagent tubs (20), for kit protocols requiring up to 20mL of reagent
- Medium reagent tubs (30), for kit protocols requiring up to 30mL of reagent eg large volume extraction processes
- Large reagent tubs
- Small, medium and large tub lids
- Tub lid seals/dropcatchers
- Large reaction filter tips
- Small reaction filter tips
- Sample cartridges
- Cartridge seals
- Processing cartridges
- Tip stands
- Waste bottle and lids
- Waste bag

Laboratory

- Pipettes and filter tips suitable for volumes between 50µL and 100µL
- Discard bins
- Fume cupboard

4.2 REAGENTS

Roche MagNA Pure kits

- MagNA Pure LC Total Nucleic Acid Isolation Kit, also Lysis Binding Buffer Refill
- MagNA Pure LC Total Nucleic Acid Large Volume Isolation Kit
- MagNA Pure LC DNA Isolation Kit I
- MagNA Pure LC DNA Isolation Kit II
- MagNA Pure LC DNA Isolation Kit III
- MagNA Pure LC RNA Isolation Kit I
- MagNA Pure LC RNA Isolation Kit II
- MagNA Pure LC mRNA Isolation Kit I
- MagNA Pure LC mRNA Isolation Kit II, also RNA Isolation Tissue Lysis Binding Buffer Refill, etc

As this list will change at intervals, please see the Roche web site for the full list of MagNA Pure Kits currently available

Laboratory

- *DNA Zap™

* Alternative anti-nuclease reagents are currently under investigation by Roche

5 PROCEDURE^{2,3}

5.1 TEST SELECTION

NA

5.2 CULTURE AND INVESTIGATION

5.2.1 FIRST USE OF THE DAY

Turn on the MagNA Pure LC robot by depressing the black switch at the rear corner on the left-hand side of the machine.

Turn on the computer to launch Windows NT.

Press Ctrl Alt Del to access MagNA Pure LC software via administrator.

Click on Change Dropcatcher. This will cause the robotic arm to move from the home position at the rear of the right hand side, to a central position at the front of the machine.

Open the robot by placing two hands firmly on the door handle, and lifting the lid.

Prepare the DNA Zap™ for cleaning the MagNA Pure LC robot and surrounding area.

In rooms containing either a fume cupboard or respirators only: Carry out this procedure in the fume cupboard, or while wearing a respirator; wear nitrile gloves and laboratory safety spectacles. Activate the DNA Zap™ by spraying DNA Zap 1 onto lint free tissues five times. Spray an equal volume of DNA Zap 2 on top of DNA Zap 1. Ensure that the tissues are wet with the DNA Zap™ preparation. Never spray DNA Zap™ directly onto the MagNA Pure LC machine.

If no fume cupboard or respirator is available, do not spray either of the DNA Zap™ reagents: Pour a volume of DNA Zap 1 onto lint free tissues, followed by an equal volume of DNA Zap 2. Ensure that the tissues are wet with the DNA Zap™ preparation.

Use DNA Zap™ to clean the magnet head, paying particular attention to the grooves.

Place a dropcatcher onto the magnet. If required, a blunt pair of forceps cleaned with DNA Zap™ can be used to insert the dropcatcher.

Apply a small amount of grease to the D-rings.

Whilst the robotic arm is forward, prepare more tissues with DNA Zap™. Wipe the inside of floor of the left hand, including the area vacated by the robotic arm, the area for elution, elute storage and post elution processing.

Discard the tissues into the clinical waste bin.

Click on Home, to return the robotic arm to the home position Top Right Hand Side.

Prepare more DNA Zap™, as before, and wipe the machine floor working area to include the area vacated by the robotic arm and the processing area and the back.

Discard the tissues into the clinical waste bin.

Prepare more DNA Zap™, as before, and wipe around the blue and yellow area of the tip holders.

OPERATION OF THE ROCHE MAGNA PURE LC AUTOMATED NUCLEIC ACID EXTRACTION ROBOT

Issue no: 2 Issue date: 02.05.06 Issued by: Standards Unit, Evaluations and Standards Laboratory Page no: 8 of 17
VSOP 36i2

This SOP should be used in conjunction with the series of other SOPs from the Health Protection Agency

www.evaluations-standards.org.uk
Email: standards@hpa.org.uk

Discard the tissues into the clinical waste bin.

Prepare more DNA Zap™, as before, and wipe around the area that houses the reagent tray and samples.

Discard the tissues into the clinical waste bin.

Prepare more DNA Zap™, as before, and wipe around the area surrounding the MagNA Pure LC Robot.

Discard the tissues into the clinical waste bin.

Place a plastic waste bag over the tip exit slide and secure with the magnet. D-rings on the 8 channel transfer head should be changed at least once a month and more frequently depending on the usage.

Carry out the leak test procedure at least once a month to avoid potential contamination problems.

5.2.2 RUNNING PROCEDURE

Prepare proteinase K for use according to kit instructions. If reagents are already in use, remove from +4°C and acclimatise to room temperature to dissolve any crystals formed prior to a run.

Click on Sample Ordering to prepare batch worklist, order extraction strategy, sample and elution volumes.

Follow the MagNA Pure LC robot instructions concerning the choice of MagNA Pure LC extraction Kit. Click on Sample Protocol, and from the pull-down Sample Protocol Menu select the appropriate extraction protocol for your run.

Select appropriate sample volume for your run (elution volume is fixed at 100µL unless the Variable Elution Protocol is selected).

Add the lot number for the kit in use and the kit expiry date.

Enter the samples onto the worklist either manually, or via the barcode reader attached to the right hand side of the computer.

Enter a sample name in the Sample Name field either by typing it from the keyboard then pressing the return key, or using a barcode reader to scan the barcode on the sample then pressing the return key.

The sample worklist can be saved as a file by clicking Save Sample Order.

As samples are added to the worklist, the wells of the Sample Cartridge Graphic on the top right hand side of the screen change from grey to yellow.

Click on Liquid Waste Discard to activate the post run clean-up facility.

When complete, click on Start Batch.

The Start Batch menu will direct the category, quantity and position of plasticware, filled reagent tubs and samples according to the information entered regarding batch size and purification protocol.

Click on the icons representing plasticware, filled reagent tubs and samples as they are placed; this includes the positioning of the discard bag for used tips (solid waste) and the seal tub lid on the droppatcher. (If required, it is possible to print the screen).

OPERATION OF THE ROCHE MAGNA PURE LC AUTOMATED NUCLEIC ACID EXTRACTION ROBOT

Issue no: 2 Issue date: 02.05.06 Issued by: Standards Unit, Evaluations and Standards Laboratory Page no: 9 of 17
VSOP 36i2

This SOP should be used in conjunction with the series of other SOPs from the Health Protection Agency

www.evaluations-standards.org.uk
Email: standards@hpa.org.uk

Check that the two cooling areas and the heating area thermal block indicators are green, and show the status 'PASS' (the process will not start unless the temperature for the cooling areas 1 and 2 is at +4°C and the heat block for the elution process is at +80°C).

The OK button will appear on the Start Information Screen when all the boxes have been clicked.

Ensure that there are no tub lid seals on the reagent tubs and that the Dispo Lockbar is down.

Click on activate, and lock the door.

Click on the OK button. The run will now start.

It is possible to stop the batch manually by clicking the Stop Batch button. It is not possible to continue the run after this command.

Evaluation of Extraction Outcome on the Results Screen:

The Result Screen appears automatically after the run. The result shown against each sample will either be: Pass (green) indicating a correct extraction or Fail (red) indicating that an error occurred during the run. The errors are coded numerically and can be checked/printed by clicking the Print Error button.

Click on Print Results to print information on the result screen.

Save the results by clicking Save Results.

Click Close to return to main menu. The instrument unlocks.

Open the machine and remove the extracted nucleic acid.

Store unused reagents at +4°C. The proteinase K solution can be kept at +4°C for 30 days and at -20°C for 12 months.

Remove used plasticware for discard.

5.2.3 END OF DAY PROCEDURES

Ensure that all disposable plasticware/reagents have been removed, this includes the dropcatcher and the liquid waste bottle.

Click on Change DropCatcher. This will cause the robotic arm to move from the home position at the rear right hand side, to a central position at the front of the machine.

Remove the dropcatcher.

Prepare some DNA Zap™ as before and clean the magnet head, paying particular attention to the grooves.

For high throughput work, empty waste bottle into an appropriately labelled container for toxic waste disposal, and discard the bottle in to the discard bin. For moderate use, where the waste bottle is not routinely filled each day, check that there is sufficient volume remaining in the waste bottle for the liquid discard, or replace if required.

Wipe away any spills from the waste bottle with DNA Zap™.

Wipe the inside of the Tip Slide with DNA Zap™, to remove soiling from the discarded tips.

Close the MagNA Pure LC lid and click on Lock Door.

On the main menu, click Decontamination button.

Set the decontamination for at least 12 hours.

Click on Activate, Start Decontamination button to commence UV decontamination.

Check the UV light is visible.

5.2.4 WEEKLY PROCEDURES

These are to be carried out by designated persons only.

Turn the machine off.

Clean all inner surfaces with DNA Zap™.

Move the robotic arm so that all the surfaces can be cleaned.

Record, and date the procedure in the machine log sheet.

Soak the waste funnel in 5 ppm bleach.

5.2.5 MONTHLY PROCEDURES

These are to be carried out by designated persons only.

Change the D-rings on the instrument.

Perform a Leak Test.

Record and date the procedure in the machine log sheet, indicating result of test. If the test fails, repeat. If it fails a second time, change the D-rings again, and repeat the test.

If there is further failure, place a notice on the machine explaining unsuitability for use, communicate with users booked on the machine and contact Roche.

5.3 IDENTIFICATION

NA

6 QUALITY ASSURANCE

A quality system should be in place to ensure that the appropriate internal and external quality assessment and quality control procedures are maintained¹⁴⁻¹⁶.

It is essential that laboratories have evidence of adequate validation of methods, equipment and commercial and in-house test procedures demonstrating that they are fit for purpose¹⁷.

7 LIMITATIONS

Successful extraction and detection of nucleic acid depends on correct specimen collection, transport, storage and processing and the provision of adequate/suitable clinical information.

The procedure in this document aims to describe a good microbiological standard method for nucleic acid extraction. Other procedures may be required and professional interpretation by qualified staff is essential. Please note that knowledge of infectious diseases changes

constantly and although this National Standard Method is regularly reviewed it may not include emerging pathogens.

8 REPORTING PROCEDURE

8.1 REPORTS

NA

8.2 REPORTING TIME

NA

9 REPORTING TO THE HPA¹⁸ (LOCAL AND REGIONAL SERVICES AND CDSC CENTRE FOR INFECTIONS)

NA

10 ACKNOWLEDGEMENTS AND CONTACTS

This National Standard Method has been developed, reviewed and revised by the Virology Working Group on Standards and Quality (http://www.hpa-standardmethods.org.uk/wg_virology.asp). We would like to thank Carol Sadler of the Virus Reference Department for her significant contribution. The contributions of many individuals in clinical virology laboratories and specialist organisations who have provided information and comment during the development of this document, and final editing by the Medical Editor are acknowledged.

The National Standard Methods are issued by Standards Unit, Evaluations and Standards Laboratory, Centre for Infections, Health Protection Agency London.

For further information please contact us at:

Standards Unit
Evaluations and Standards Laboratory
Centre for Infections
Health Protection Agency
Colindale
London
NW9 5EQ
E-mail: standards@hpa.org.uk

APPENDIX 1: PRE-TREATMENT OF CLINICAL SPECIMENS

Whole blood plasma, serum, CSF, tissue culture fluid:

No pre-treatment required.

Urine for CMV, polyomavirus etc, bronchial lavage, NPA:

Pellet cells from up to 1mL of specimen. Remove supernatant. Re-suspend pellet in PBS.

Stool for norovirus, adenovirus etc:

Pre-treatment with STAR buffer (Roche). Extract supernatant.

Tissue/Biopsy specimen:

Homogenise tissue in PBS by vortexing with glass beads. Extract the supernatant.

Bacterial Culture:

The samples are first lysed with a special Bacteria Lysis Buffer and Proteinase K. To inactivate microorganisms, samples are boiled (95°C for 10 min) prior to transfer to the MagNA Pure LC Instrument.

External lysis:

May be required for certain specimens/targets eg suspected influenza H5.

A summary of the recommendations from evaluations is detailed in the table below.

APPENDIX 2: SUMMARY OF THE RECOMMENDATIONS FROM EVALUATIONS

Target	MagNA Pure Kit	Input Vol.	Output Vol.	Sample type
CMV	Total NA	200µL	100µL	EDTA blood, serum, urine, BAL
Enterovirus	Total NA	200µL	50µL	CSF
EBV	Total NA	200µL	50µL	Serum
Parechovirus (E22, E23)	Total NA	200µL	50µL	CSF
HCV	Total NA	200µL	50µL	Serum
HPV	Total NA	100µL	50µL	Liquid cytology, tissue & anal swab
HPV	DNA II	90µL	200µL	Tissue
HSV	Total NA	200µL	50µL	CSF, biopsy, swabs
NLV	STAR+ Total NA	200µL	100µL	Faecal sample
VZV	Total NA	200µL	100µL	CSF
<i>Mycobacterium tuberculosis</i>	DNA II	100µL	100µL	Respiratory, tissue, CSF, pus
<i>Streptococcus pneumoniae</i>	Total NA	200µL	100µL	EDTA Blood, CSF
<i>Streptococcus pneumoniae</i>	DNA III	100µL	100µL	Pleural effusion, pus, Guthrie spot
<i>Neisseria meningitidis</i>	Total NA	100µL	50µL	CSF, EDTA blood, serum
<i>Clostridium perfringens</i>	Total NA			pure culture
<i>Listeria monocytogenes</i>	DNA III			pure culture

<i>Campylobacter</i> species	DNA III			pure culture
<i>Helicobacter pylori</i>	DNA III			pure culture

UNDER REVIEW

APPENDIX 3: STORAGE OF EXTRACTS

Extracts can be stored in the sample tray, covered with sealing film/parafilm or transferred to individual tubes.

Storage temperature: +4°C for use the same day
-20°C for short term storage (weeks)
For long-term storage, store the DNA at -15 to -25°C
-70°C for long term storage (months) / storage of RNA

If the extract is needed for multiple tests eg a positive control extract, store in small aliquots to reduce freeze-thaw damage.

UNDER REVIEW

REFERENCES

1. Department of Health NHS Executive: The Caldicott Committee. Report on the review of patient-identifiable information. London. December 1997.
2. Roche. Molecular Biochemicals MagNA Pure LC Operator's Manual, Version 3.0. 2003.
3. Advisory Committee on Dangerous Pathogens. 2004 Approved List of Biological Agents. <http://www.hse.gov.uk/pubns/misc208.pdf>. p. 1-17.
4. Public Health Laboratory Service Standing Advisory Committee on Laboratory Safety. Safety Precautions: Notes for Guidance. 4th ed. London: Public Health Laboratory Service (PHLS); 1993.
5. Control of Substances Hazardous to Health Regulations 2002. General COSHH. Approved Code of Practice and Guidance, L5. Suffolk: HSE Books; 2002.
6. Health and Safety Executive. 5 steps to risk assessment: a step by step guide to a safer and healthier workplace, IND (G) 163 (REVL). Suffolk: HSE Books; 2002.
7. Health and Safety Executive. A guide to risk assessment requirements: common provisions in health and safety law, IND (G) 218 (L). Suffolk: HSE Books; 2002.
8. Health Services Advisory Committee. Safety in Health Service Laboratories. Safe working and the prevention of infection in clinical laboratories and similar facilities. 2nd ed. Suffolk: HSE Books; 2003.
9. NHS Estates. Health Building Note 15. Facilities for pathology services. 2nd ed. London: Her Majesty's Stationary Office (HMSO); 2005.
10. BS EN 12469: 2000. Biotechnology - performance criteria for microbiological safety cabinets. London: British Standards Institution (BSI); 2000.
11. BS 5726: 1992. Microbiological safety cabinets. Part 2. Recommendations for information to be exchanged between purchaser, vendor and installer and recommendations for installation. London: British Standards Institution (BSI); 1992.
12. BS 5726: 1992. Microbiological safety cabinets. Part 4. Recommendations for selection, use and maintenance. London: British Standards Institution (BSI); 1992.
13. Advisory Committee on Dangerous Pathogens. The management, design and operation of microbiological containment laboratories. Suffolk: HSE Books; 2001.
14. Health Protection Agency. QSOP 27 - Quality assurance in the diagnostic virology and serology laboratory. London: Health Protection Agency; 2003.
15. Snell JJS, Brown D F J, Roberts C, editors. Quality Assurance Principles and Practice in the Microbiology Laboratory. London: Public Health Laboratory Service; 1999. p. 147-8
16. Health Protection Agency. QSOP 38 - Good laboratory practice when performing molecular amplification assays. London: Health Protection Agency; 2003.
17. Clinical Pathology Accreditation (UK) Ltd. Standards for the Medical Laboratory. Sheffield 2004. p. 1-56
18. PHLS, CDSC. Reporting to the PHLS Communicable Disease Surveillance Centre: a reference for laboratories. May. 2001.

OPERATION OF THE ROCHE MAGNA PURE LC AUTOMATED NUCLEIC ACID EXTRACTION ROBOT

Issue no: 2 Issue date: 02.05.06 Issued by: Standards Unit, Evaluations and Standards Laboratory Page no: 17 of 17
VSOP 36i2

This SOP should be used in conjunction with the series of other SOPs from the Health Protection Agency

www.evaluations-standards.org.uk

Email: standards@hpa.org.uk