Title	**Purify Nucleic Acids**		
Level	**6**	**Credits**	**4**

Purpose	People credited with this unit standard are able to: describe purification techniques for nucleic acids; and carry out DNA and RNA purification techniques.

Classification	Science > Molecular Biology

Available grade	Achieved

Guidance Information

1 All work must be carried out in accordance with the quality management system, documented protocol system or Standard Operating Procedures (SOP) acceptable in a commercial or research laboratory.

2 Health and Safety practices must conform to Australian/New Zealand Standard AS/NZS 2243 – *Safety in Laboratories* Parts 1, 2, 3, 7 and 10 available at http://www.standards.co.nz and http://infostore.saiglobal.com/store.

3 Legislation applicable to this unit standard includes:
Health and Safety at Work Act 2015;
Hazardous Substances and New Organisms Act 1996.

4 Glossary
Laboratory procedures refer to documented systems or processes of operation which may be found in a SOP manual, quality management system, or in protocol system documentation. These procedures are external and/or internal laboratory requirements governing laboratory work.

5 Recommended for entry: Unit 8040, *Perform aseptic laboratory techniques*; Unit 8043, *Perform spectrophotometric analyses*; and Unit 8044, *Perform laboratory centrifugation techniques*.

Outcomes and performance criteria

Outcome 1

Describe purification techniques for nucleic acids.

Range one each of DNA and RNA.

Performance criteria

1.1 A technique is selected according to the type of nucleic acid, the material from which the nucleic acid is to be purified, and quantity required.

1.2 Factors are identified that will influence biochemical properties of the nucleic acid.

Range temperature, concentration, ionic strength, nuclease activity, shearing effects, storage conditions.

1.3 Factors are identified that will influence biochemical properties of DNA and RNA.

Range two of – temperature, concentration, ionic strength, shearing effects, storage conditions.

Outcome 2

Carry out a DNA purification technique.

Range temperature, concentration, ionic strength, nuclease activity, shearing effects, storage conditions.

Performance criteria

2.1 Disruption procedure is selected according to cell or tissue type to allow for functional integrity of DNA to be maintained.

2.2 DNA is extracted from a sample and purified in accordance with laboratory procedures.

2.3 DNA yield and purity are determined in accordance with laboratory procedures.

Outcome 3

Carry out an RNA purification technique.

Range material from which RNA is to be purified may include two of – plant, animal, microorganism, electrophoresis gel.

Performance criteria

3.1 Ribonuclease free conditions are maintained, and RNA is obtained in accordance with laboratory procedures.

3.2 RNA yield and purity are determined in accordance with laboratory procedures.

Replacement information	This unit standard replaced unit standard 8061 and unit standard 8062.

Planned review date	31 December 2023

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 September 2010	N/A
Rollover	2	27 January 2015	N/A
Review	3	27 September 2018	N/A

Consent and Moderation Requirements (CMR) reference	0113

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact NZQA National Qualifications Services nqs@nzqa.govt.nz if you wish to suggest changes to the content of this unit standard.