

Title	Demonstrate knowledge of recombinant DNA techniques		
Level	6	Credits	4

Purpose	People credited with this unit standard are able to discuss: cloning techniques; analyses of gene clones; and gene transfer techniques.
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Classification	Science > Molecular Biology
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Available grade	Achieved
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Guidance Information

Recommended for entry: Unit 8070, *Demonstrate knowledge of gene structure, replication, and expression.*

Outcomes and performance criteria

Outcome 1

Discuss cloning techniques.

Performance criteria

- 1.1 Types of enzymes used are discussed in terms of recombinant DNA construction.
- Range restriction endonucleases, ligases, phosphatases, nucleases, kinases, polymerases, reverse transcriptase.
- 1.2 Process of gene cloning is discussed in terms of requirements.

Outcome 2

Discuss analyses of gene clones.

Performance criteria

- 2.1 Identification of the clone is discussed in terms of DNA sequence analysis.
- Range DNA sequence analysis includes – chain termination, chemical cleavage, automated sequencing.
- 2.2 Construction of a physical map of a gene clone is explained in terms of restriction enzyme analysis.

Outcome 3

Discuss gene transfer techniques.

Range select one taxon – bacteria, animals, plants;
evidence of three techniques applicable to the chosen taxon.

Performance criteria

3.1 Process of gene transfer is discussed in terms of chosen taxon and technique.

3.2 Techniques are discussed in terms of application.

Range evidence of two applications for each technique.

Replacement information	This unit standard replaced unit standard 8068 and unit standard 8069.
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 September 2010	31 December 2025
Rollover	2	27 January 2015	31 December 2025
Review	3	27 September 2018	31 December 2025
Review	4	30 November 2023	31 December 2025

Consent and Moderation Requirements (CMR) reference	0113
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.