Title	**Apply principles of bacterial identification**		
Level	**5**	**Credits**	**6**

Purpose	People credited with this unit standard are able to: establish a pure culture from a mixed culture sample; perform identification processes; apply knowledge of Linnaean taxonomy to identify bacteria; perform identification processes to species level using a proprietary method; and discuss the use of alternative means of bacterial identification.

Classification	Science > Microbiology

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.

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

4 The underpinning knowledge for this unit standard is how the knowledge of structure, physiology, and metabolism relate to the classification and identification of bacteria.

5 The bacteria used for assessment must be a known species.

6 Glossary
Proprietary method refers to rapid identification systems.
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.

7 Recommended for entry: Unit 8040, *Perform aseptic laboratory techniques*; and Unit 26117, *Work safely in a science laboratory*.

Outcomes and performance criteria

Outcome 1

Establish a pure culture from a mixed culture sample.

Performance criteria

1.1 Media are selected consistent with the sample in accordance with laboratory procedures.

1.2 Bacteria are plated out to achieve isolated colonies in accordance with laboratory procedures.

Outcome 2

Perform identification processes.

Performance criteria

2.1 Bacteria are identified and confirmed using selected tests in accordance with laboratory procedures.

Range may include – selective media, differential media, Gram stain, motility, atmospheric growth requirements, oxidase, catalase, oxidation-fermentation, sugar utilisation including gas production, nitrate reduction, urease, acid fast, coagulase, methyl red, Vogues Proskauer.

2.2 Selected identification tests and results for the bacteria are documented in accordance with laboratory procedures.

Outcome 3

Apply knowledge of Linnaean taxonomy to identify bacteria.

Performance criteria

3.1 Characteristics of a named bacterium are distinguished according to Linnaean Taxonomy.

3.2 Bacterium is identified from a given set of characteristics according to Linnaean Taxonomy.

3.3 Identification steps and results are documented in accordance with laboratory procedures.

Outcome 4

Perform identification processes to species level using a proprietary method.

Performance criteria

4.1 Proprietary method is selected consistent with predicted bacteria.

4.2 Bacteria are identified using the selected test and associated proprietary methods for the interpretation of results to species level.

4.3 Identification steps and results are documented in accordance with laboratory procedures.

Outcome 5

Discuss the use of alternative means of bacterial identification.

Performance criteria

5.1 Techniques are discussed in terms of bacterial identification.

Range techniques include – ribotyping, immunological; serotyping.

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	22 December 1996	31 December 2014
Review	2	24 February 1998	31 December 2014
Review	3	23 November 1999	31 December 2014
Review	4	21 May 2010	31 December 2025
Rollover	5	27 January 2015	31 December 2025
Review	6	27 September 2018	31 December 2025
Review	7	30 November 2023	31 December 2025

Consent and Moderation Requirements (CMR) reference	0113

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