

<b>Title</b>	<b>Perform electrophoresis</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>3</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe an electrophoretic technique; carry out an electrophoretic technique; and interpret results.
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<b>Classification</b>	Science > Molecular Biology
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<b>Available grade</b>	Achieved
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### Guidance Information

- All work must be carried out in accordance with the quality management system, documented protocol system or Standard Operating Procedures acceptable in a commercial or research laboratory.
- 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>. Particular attention should be paid to the special safety requirements relating to: high voltage, current, ethidium bromide, silver nitrate, ultraviolet light, TEMED, acrylamides, ammonium persulphate.
- Legislation applicable to this unit standard includes:  
Health and Safety at Work Act 2015;  
Hazardous Substances and New Organisms Act 1996.
- 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.
- Recommended for entry: Unit 26117, *Work safely in a science laboratory*.

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### Outcomes and performance criteria

#### Outcome 1

Describe an electrophoretic technique.

Range includes one of – agarose, polyacrylamide, cellulose acetate.

**Performance criteria**

- 1.1 A technique is described according to factors affecting the separation of molecules.
- Range medium, buffers, equipment, electric field, cathode, anode, relative mobilities, reference standards, frictional coefficient, electrophoretic mobility, charge, molecular dimensions.
- 1.2 Detection methods are described according to the molecules separated.
- Range detection methods may include – ethidium bromide, autoradiography, fluorography.

**Outcome 2**

Carry out an electrophoretic technique.

Range protein, nucleic acid.

**Performance criteria**

- 2.1 Medium, buffers, and reference standards are prepared in accordance with laboratory procedures.
- Range medium preparation includes – mixing, pouring, laying, comb, dam.
- 2.2 Samples are prepared using the selected technique in accordance with laboratory procedures.
- 2.3 Detection method is applied in accordance with the technique.
- 2.4 Separated compounds are visualised in accordance with the technique.
- 2.5 Separation of sample components is achieved to allow the sample to be identified and/or quantified.

**Outcome 3**

Interpret results.

**Performance criteria**

- 3.1 Results are recorded and analysed in accordance with laboratory procedures.
- 3.2 Interpretation is consistent with results and sample.

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<b>Planned review date</b>	31 December 2023
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**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	23 November 1999	31 December 2014
Review	3	17 September 2010	N/A
Rollover	4	27 January 2015	N/A
Review	5	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](mailto:nqs@nzqa.govt.nz) if you wish to suggest changes to the content of this unit standard.