

AQA A-Level Chemistry

Chromatography

Questions only

All 2 chromatography questions

Questions

2

Total marks

5

Time allowed

7 min

Name

Class or teacher

Date

Instructions

- Answer all questions in the spaces provided.
- Use black ink. Show your working for every calculation.
- You may use a scientific calculator and the AQA Data Sheet.
- Print the separate mark scheme when you are ready to mark your answers.

For marking

Q	Source	Marks	Score
1	2021 A-level P3 Q2	4	
2	2025 A-level P3 Q33	1	

Total _____ / 5 Percentage _____ %

Questions from AQA past papers, 2021–2025, reproduced for revision. Practise these topics online, with instant marking:
whiteboardchemistry.com/revision/aqa-a-level-chemistry/exam-questions?topics=chromatography&len=0

Questions

Chromatography · 2 questions · 5 marks · time allowed 7 min

Q1 · November 2021 · Paper 3 · Q2 · [4 marks]

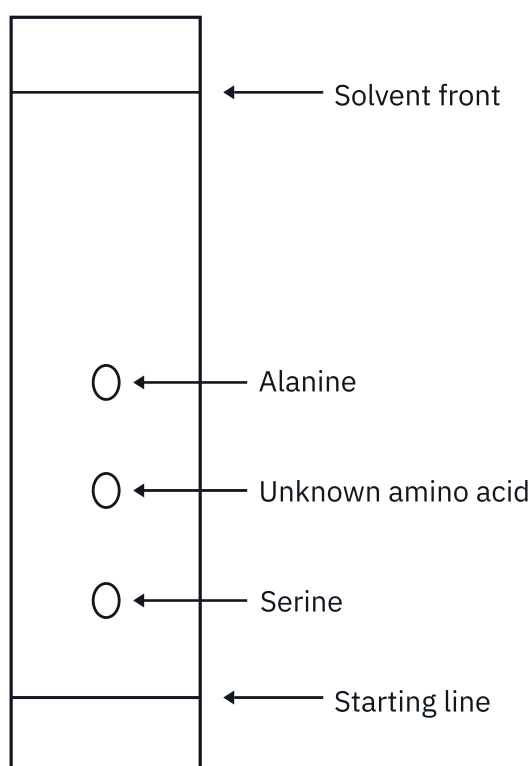
The protein fibroin can be broken down into amino acids using an enzyme.

(a) A student uses thin-layer chromatography (TLC) to identify these amino acids.

The student identifies two of the amino acids as alanine and serine.

Use the figure below to calculate the R_f value of the unknown amino acid. Show your working.

Use your R_f value and the table below to identify the unknown amino acid.



Amino acid	R_f value
tyrosine	0.25
glycine	0.34
valine	0.64
leucine	0.73

[2 marks]

Rf value

Identity

(b) The amino acids cannot be seen as they move during the experiment.

State how the amino acids can be made visible at the end of the experiment.

[1 mark]

(c) State why each amino acid has a different Rf value.

[1 mark]

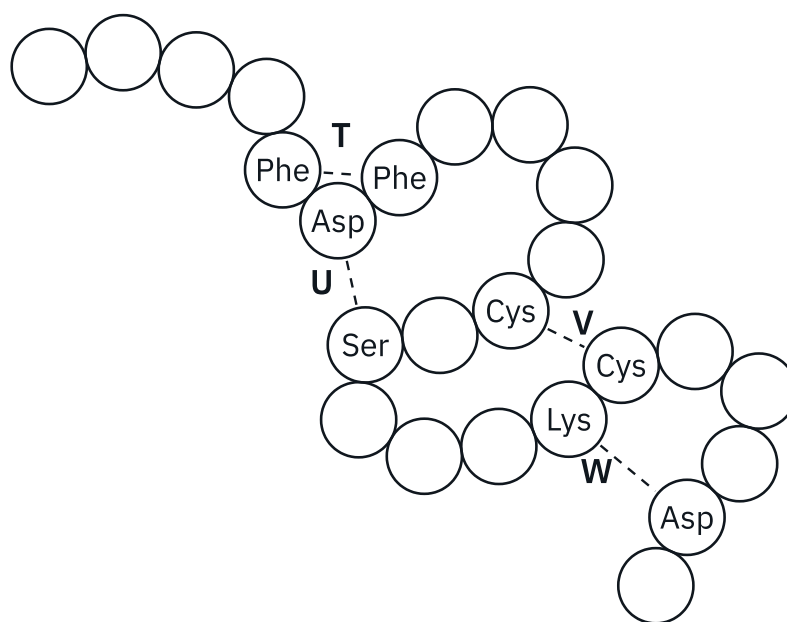
Q2 · June 2025 · Paper 3 · Q33 · [1 mark]

The diagram shows part of the tertiary structure for a protein.

Some of the amino acids in this structure are shown using the first three letters of their names.

The general formula of an amino acid is $\text{RCH}(\text{NH}_2)\text{COOH}$

Interactions between amino acid R groups are shown at positions T, U, V and W.



Which two R group interactions are a type of intermolecular force and a covalent bond?

Use the Data Booklet to help you answer this question.

Tick (✓) one box.

- ☐ **A** T and U
- ☐ **B** V and W
- ☐ **C** U and V
- ☐ **D** U and W

Source: AQA A-Level Chemistry past papers. Reproduced for revision at whiteboardchemistry.com.

Mark scheme:

whiteboardchemistry.com/revision/aqa-a-level-chemistry/exam-questions/pdf/chromatography-mark-scheme.pdf