

21.1 Biotechnology and genetic modification

Name: _____ Class: _____ Date: _____ **Total: 6 marks**

KEY WORDS bacteria 细菌 • plasmids 质粒 • biotechnology 生物技术 • enzymes 酶
• molecules 分子

Objective

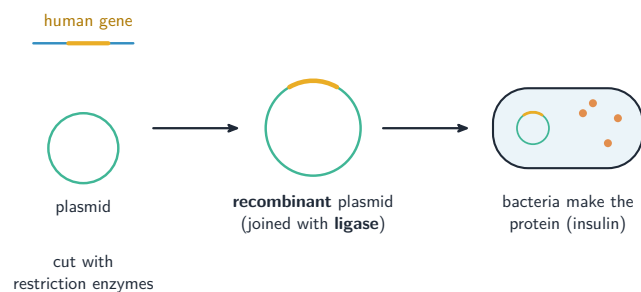
Build the skills to answer exam questions on **biotechnology and genetic modification** 生物技术与基因改造 — what they are, and why **bacteria** 细菌 are useful.

You must be able to:

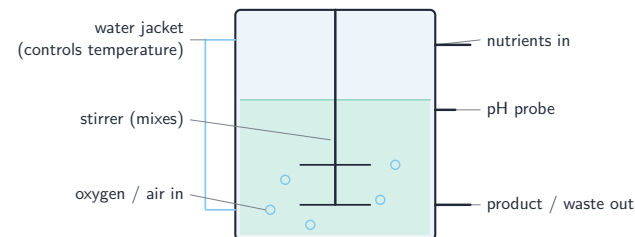
- define biotechnology and genetic modification
- explain why bacteria are used in biotechnology
- recognise the uses of each

1 Worked examples

■ Why bacteria



Biotechnology uses living things (or their enzymes) to make useful products; GM changes an organism's genes



Biotechnology uses fermenters to grow microbes

- **bacteria** are useful: reproduce fast, make complex molecules, contain plasmids, few ethical issues.

2 Practice

2.1 Define biotechnology. [1]

2.2 Define genetic modification. [1]

3 Exam-style questions

3.1 Bacteria are useful in biotechnology because they: [1]

A	B
C	D

- A reproduce slowly
- B reproduce very fast and contain plasmids
- C cannot make molecules
- D have no DNA

3.2 Bacteria are widely used in biotechnology.

(a) State two reasons why bacteria are suitable. [2]

(b) State one product made using bacteria. [1]