

3.2.2 Uses of monoclonal antibodies

AQA GCSE Biology (Higher) Question and answer notes

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How to use these notes

These notes cover everything you need to know for this part of the specification. They have been written in question-answer format to make them easier for you to study from.

In order to study successfully, I recommend you do the following for each question and answer:

- Read it carefully and make sure you **understand** it.
- **Memorise** the answer.
- **Practice** applying your understanding to past exam questions.

A good way to memorise information is to use **retrieval practice**. This is when you practise retrieving information from your memory. You could do this by making a flashcard for each question with the question on one side and the answer on the other. Or you could use a flashcard app. Alternatively, use a sheet of paper to cover up the answer so you can only see the question. Try to answer the question and then check how you did.

You should practise retrieving each answer from your memory until you can do it perfectly. Even once you can retrieve the answer perfectly, your ability to retrieve it will probably fade as time passes without practising. Therefore you will need to keep going back to the questions that you have previously mastered and practising them again. However, each time you re-learn the answer, the memory will be stronger and will last longer than the time before.

What are some uses of monoclonal antibodies?

Uses of monoclonal antibodies include:

- Pregnancy tests - using monoclonal antibodies that bind a hormone that is only found in the urine during pregnancy.
- Tests for specific pathogens - using monoclonal antibodies that bind to an antigen on the surface of the pathogen being tested for.
- Use in research to find out where a specific molecule is in a cell or tissue. This is done by binding a fluorescent dye to the monoclonal antibodies, making them easy to locate.
- To treat some diseases (e.g. some cancers) - for example, by binding a radioactive or toxic substance to the monoclonal antibodies in order to kill any cells that have the antigens that the antibodies bind to.