

Herceptin – the first cancer treatment with monoclonal antibodies

The discovery of antibodies and the immune response has led to a number of medical uses. Where the antibodies are harvested from a single clone of B-lymphocytes these antibodies are called "monoclonal antibodies".

The first step in the production of monoclonal antibodies is to get an animal's immune system to produce antibodies. In Herceptin production the membrane protein HER2 is injected into a mouse. HER2 is found in large amounts in cancer cell membranes.

Complete the table below to illustrate the details of the production of monoclonal antibodies using the example of the drug Herceptin.

Step in the production of monoclonal antibodies	Details of the process of production of Herceptin.
Induce an immune response in an animal's immune system using the desired antigen	The membrane protein HER2 is injected into a mouse.
Harvest B-lymphocytes from the spleen which are actively making antibodies.	
Fuse tumour cells (myeloma cells) with the B-lymphocytes	
Grow these hybridoma cells and harvest the antibodies	
Modify the antibodies for the specific treatment / diagnosis	

