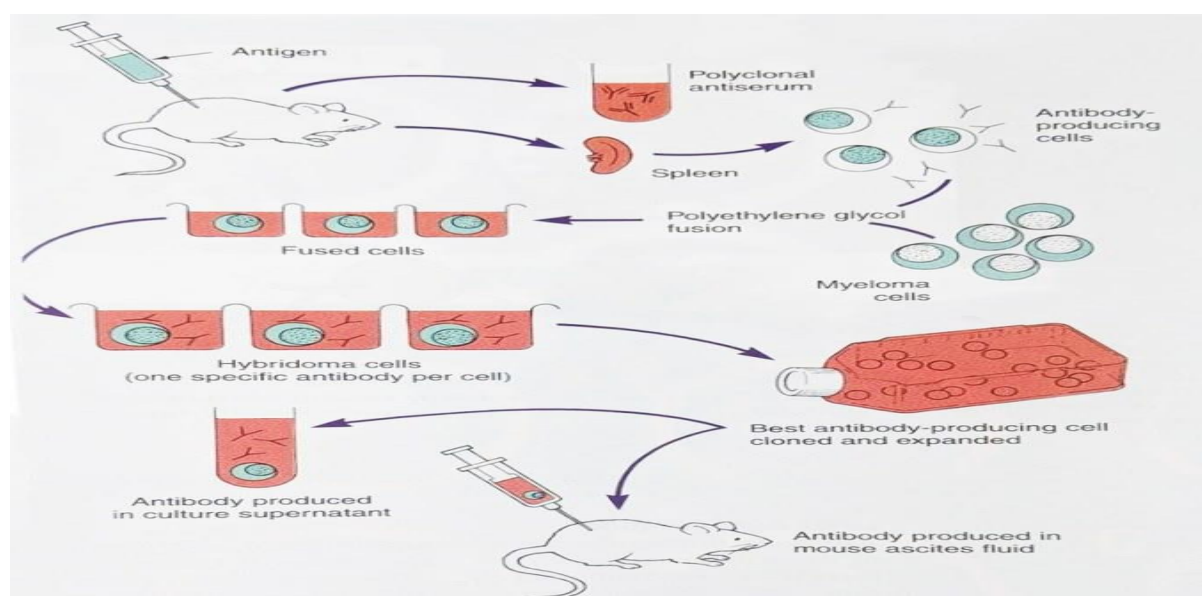


What are monoclonal antibodies?

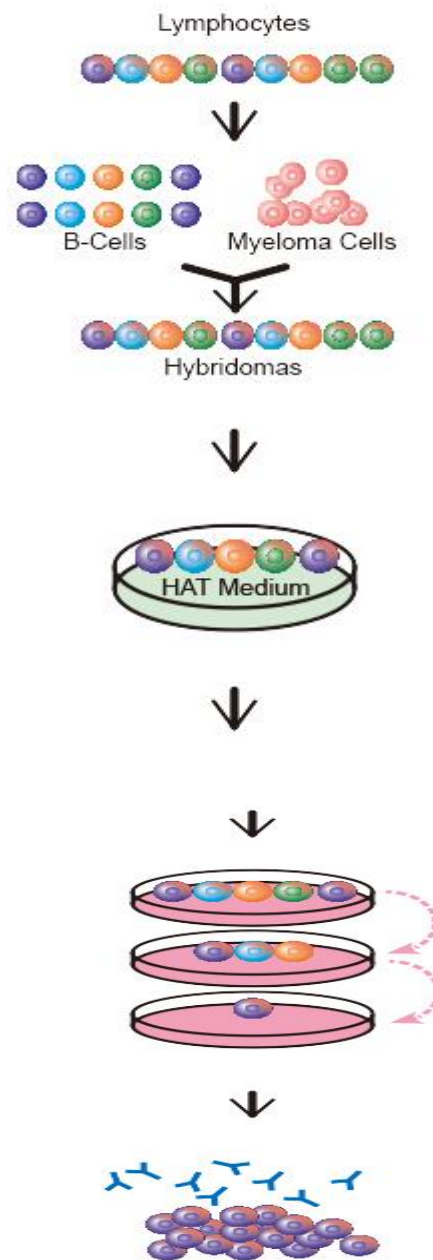
Monoclonal antibodies (mAb or moAb) are identical immunoglobulins, generated from a single B-cell clone. These antibodies recognize unique epitopes, or binding sites, on a single antigen. Derivation from a single B-cell clones and subsequent targeting of a single epitope is what differentiates monoclonal antibodies from polyclonal antibodies.

Given almost any substance, it is possible to produce monoclonal antibodies that specifically bind to that substance; they can then serve to detect or purify that substance. This has become an important tool in biochemistry, molecular biology, and medicine



How to make monoclonal antibodies

Monoclonal antibody generation begins in exactly the same manner as polyclonal antibody generation, with the creation of a robust immune response. However, rather than collecting host serum to recover a population of polyclonal antibodies, monoclonal antibody generation requires collection of the cells that make antibodies, lymphocytes. Once harvested, lymphocytes are immortalized, established as clonal through limiting dilutions, screened for appropriate expression, expanded and preserved as outlined below.



Monoclonal Antibody Applications

Application	Monoclonal Antibody Use Rationale
ELISA Detection Antibody (direct, indirect, sandwich, and capture ELISA formats)	Single epitope recognition offers reduction of non-specificity.
ELISA Capture Antibody	Specificity offers clean recovery of antigen from complex samples.
Western Blot Detection Antibody	Single epitope recognition may provide less non-specific signal development.
Therapeutic Antibody Drug	Specificity reduces off possible target effects.
Clinical Tests	Clonality provides standard batch to batch production and therefore consistent results.