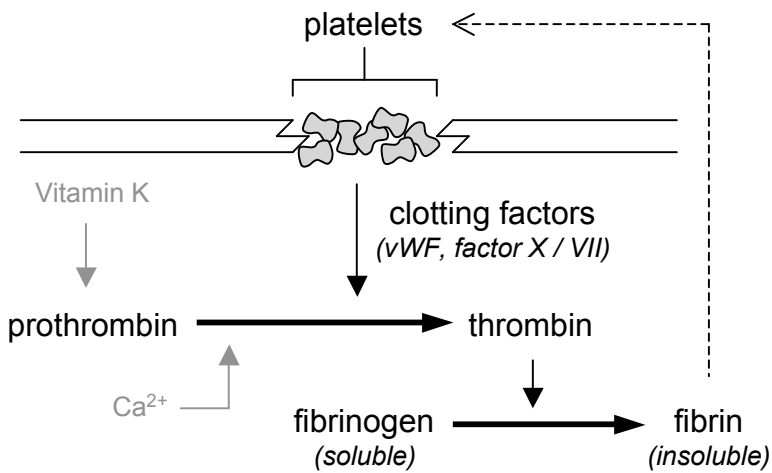


Defence Against Infectious Disease (11.1)

Describe the process of clotting (11.1.1)



Outline immunity (11.1.2)

Challenge and Response

- Immune system must be challenged with an antigen in order to initiate a response (antibody production)

Clonal Selection

- The immune system selects the cell specific to the antigen and initiates cloning and differentiation of the cell

Memory Cells

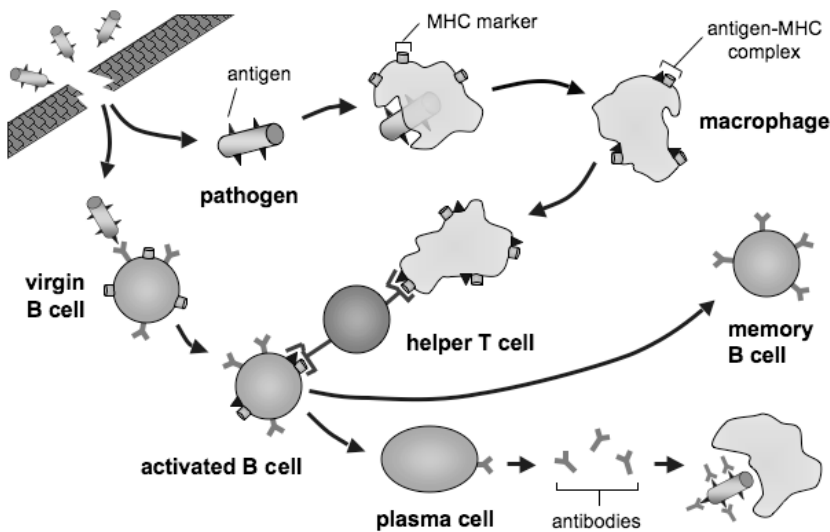
- Some lymphocytes (T & B cells) form memory cells that last for long periods for long-term immunity

Define active and passive immunity (11.1.3)

Active: Immunity due to the production of antibodies by the organism itself (*permanent*)

Passive: Immunity due to the acquisition of antibodies from another source (*temporary*)

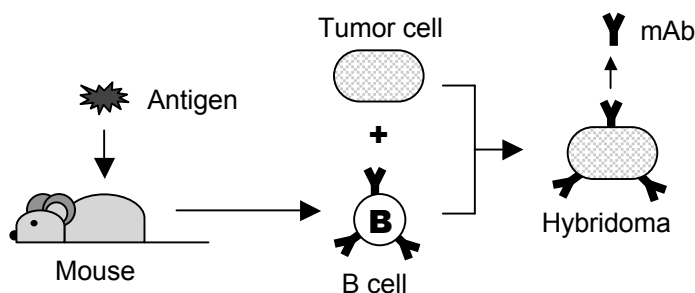
Explain antibody production (11.1.4)



Antibody Production:

- Pathogens invade body
- Macrophage engulfs pathogen
- Antigenic fragments presented
- T_H cell activates B cell
- B cell divides into plasma cells
- Plasma cells produce antibodies
- Antibodies are globular proteins
- Antibodies *specific* to antigen
- Pathogen is destroyed
- Some B cells become B_M cells
- Confer long-term immunity

Describe mAb production (11.1.5)



Diagnosis: Pregnancy testing (anti-hCG monoclonal antibodies)

Treatment: Parasitic infections of immunodeficient individuals

Vaccination (11.1.6 / 11.1.7)

- An attenuated antigenic fragment is injected into an individual
- Immune system activated
- Memory cells provide immunity

Benefits

- Reduced death and disability
- Reduced spread (herd immunity)

Disadvantages

- Side effects are possible
- Less effective than natural immunity