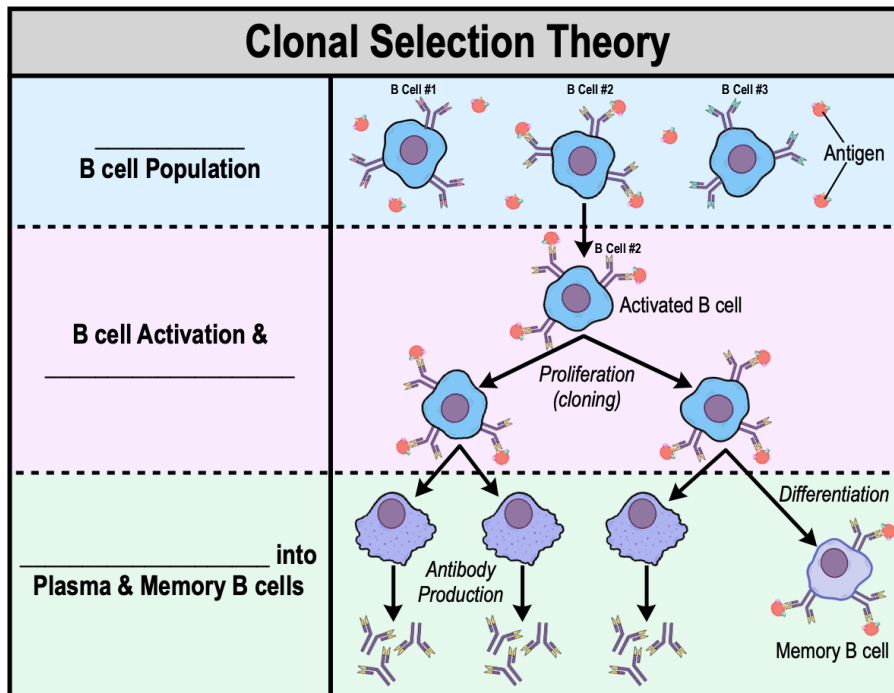


CONCEPT: CLONAL SELECTION

- Each *individual* B & T cell has many identical BCRs/TCRs that only allows it to respond to _____ very specific antigen.
 - *Populations* of many different B & T cells can recognize & respond to a _____ range of many different antigens.
- How does our adaptive immune system ensure proliferation of *only* B & T cells that *appropriately* respond to an infection?
- **Clonal Selection Theory:** upon infection, _____ B & T cells in a mixed population are *selected* to make *clones*.
 - Only the B & T cells that _____ the antigen are selected to proliferate & create an army of *clones*.
 - B & T cells that do NOT bind the antigen are _____ selected to proliferate.

EXAMPLE: Clonal selection of specific B cells in a mixed B cell population in response to a specific antigen.



PRACTICE: Which of the following statements is FALSE?

- Each B cell has BCRs that bind to a single antigen.
- The cell type that secretes antibodies is called a plasma cell.
- A BCR allows naive B cells to detect an antigen.
- All naive B cells that are close in proximity to an antigen begin to differentiate.

PRACTICE: Clonal selection:

- Implies that each individual lymphocyte produces a single antibody.
- Describes how the adaptive immune system can produce millions of different antibodies.
- Depends on an antibody recognizing a specific epitope.
- Is based on random naive B cells proliferating and differentiating.

CONCEPT: CLONAL SELECTION

PRACTICE: The clonal selection theory states that:

- a) Self-reacting T cells are destroyed in the bone marrow.
- b) B cells will only proliferate during an infection if their BCRs successfully bind to the pathogen.
- c) Antibody structure changes as it encounters an antigen for higher specificity binding.
- d) Each T cell produces many different types of antibodies.

PRACTICE: Which of the following is NOT an organ where clonal selection occurs?

- a) Spleen.
- b) Lymph nodes.
- c) Bone marrow.
- d) Mucosa associated lymphoid tissue.

PRACTICE: All of the following are postulates of the clonal selection theory EXCEPT:

- a) Each B lymphocyte bears a single type of receptor with a unique specificity.
- b) BCR occupation is required for cell activation.
- c) Differentiated cells derived from an activated B lymphocyte bear receptors of similar specificity as the parent cell.
- d) B lymphocytes bearing receptors for self-molecules are destroyed at an early stage.
- e) All are postulates of the clonal selection theory.