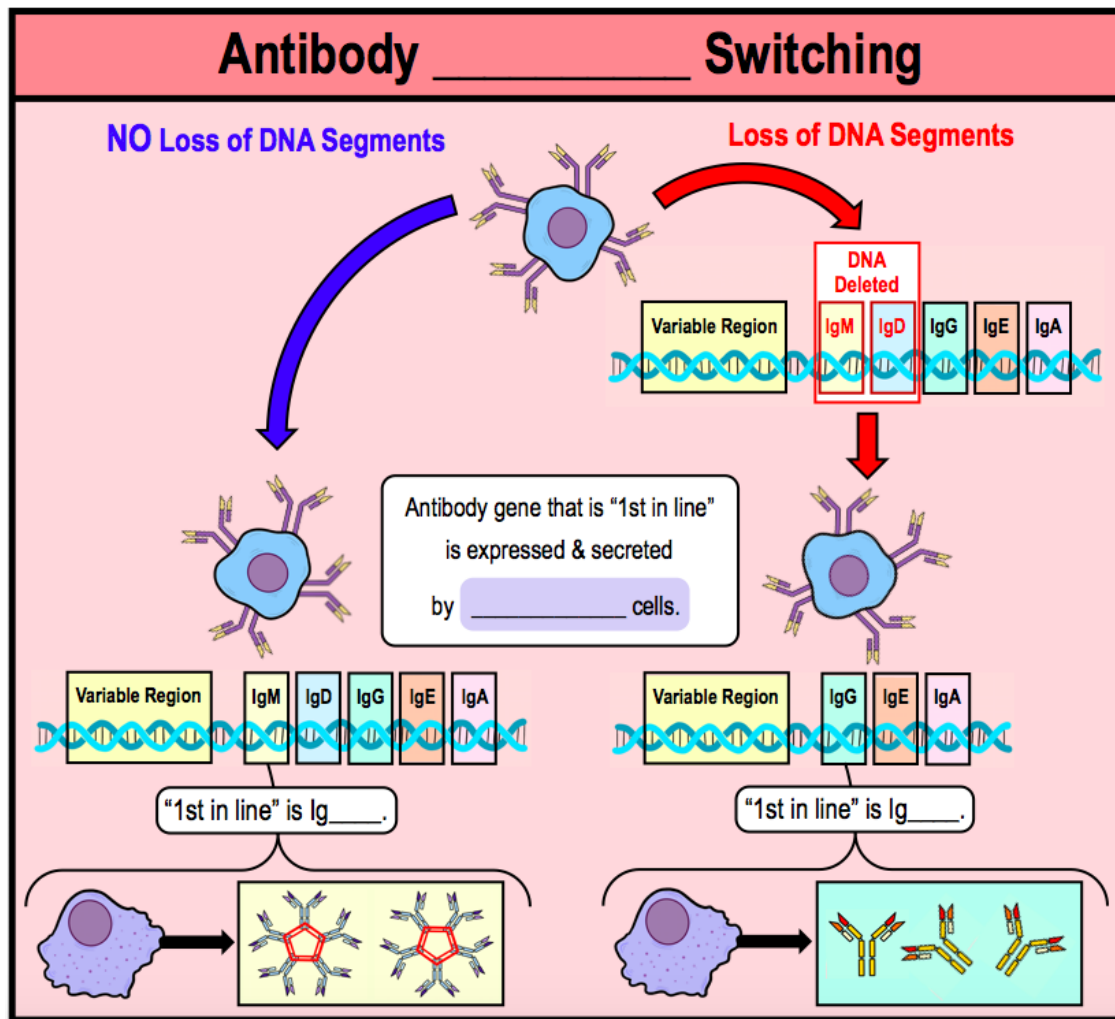


CONCEPT: ANTIBODY CLASS SWITCHING

- *Recall:* When plasma cells are first formed from B cells, they *initially* begin producing/secreting the antibody Ig_____.
- However, as B cells multiply, some undergo a process known as *antibody _____ switching*.
 - **Antibody Class Switching:** changes in DNA allowing a plasma cell to change its antibody class (ex. IgM → IgG).
 - Occurs via genetic *rearrangement* of DNA encoding the antibody's _____ region.
 - New antibody class still maintains specificity for _____ epitope of *same* antigen (variable region *unchanged*).
 - Deleted gene segments are _____ expressed, & gene segment for constant region "**1st in line**" is expressed.



PRACTICE: Class switching occurs when which of the following scenarios occur?

- The deletion of specific heavy chain genes in the B cell DNA.
- Genetic variation of the variable region in an antibody gene within a B cell.
- Large deletions of genes encoding the variable region of antibodies in B cells.
- Gene rearrangements in a T cytotoxic cell causing the cell to become a T helper cell.

CONCEPT: ANTIBODY CLASS SWITCHING

PRACTICE: Which lymphocyte is responsible for inducing class switching in B cells?

- a) Regulatory T cells.
- b) Cytotoxic T cells.
- c) Helper T cells.
- d) Memory T cells.

PRACTICE: Why is class switching of antibodies during an infection important for effectively fighting the infection?

- a) Class switching allows the immune system to choose the most effective antibody class for fighting the infection.
- b) Different antibody classes have different strengths and functions.
- c) Certain antibody classes will not bind or recognize specific antigens/pathogens.
- d) A and B.
- e) B and C.
- f) A and C.
- g) All of the above.

PRACTICE: Antibody class switching rearranges the genes within a B cell which controls the type of antibody secreted by the plasma B cell. During this gene rearrangement, the _____ region of the antibody is affected and the _____ region of the antibody is unaffected. This means that antibody class switching is antigen specificity _____.

- a) Constant region; Variable region; Independent.
- b) Variable region; Constant region; Independent.
- c) Constant region; Variable region; Dependent.
- d) Variable region; Constant region; Dependent.