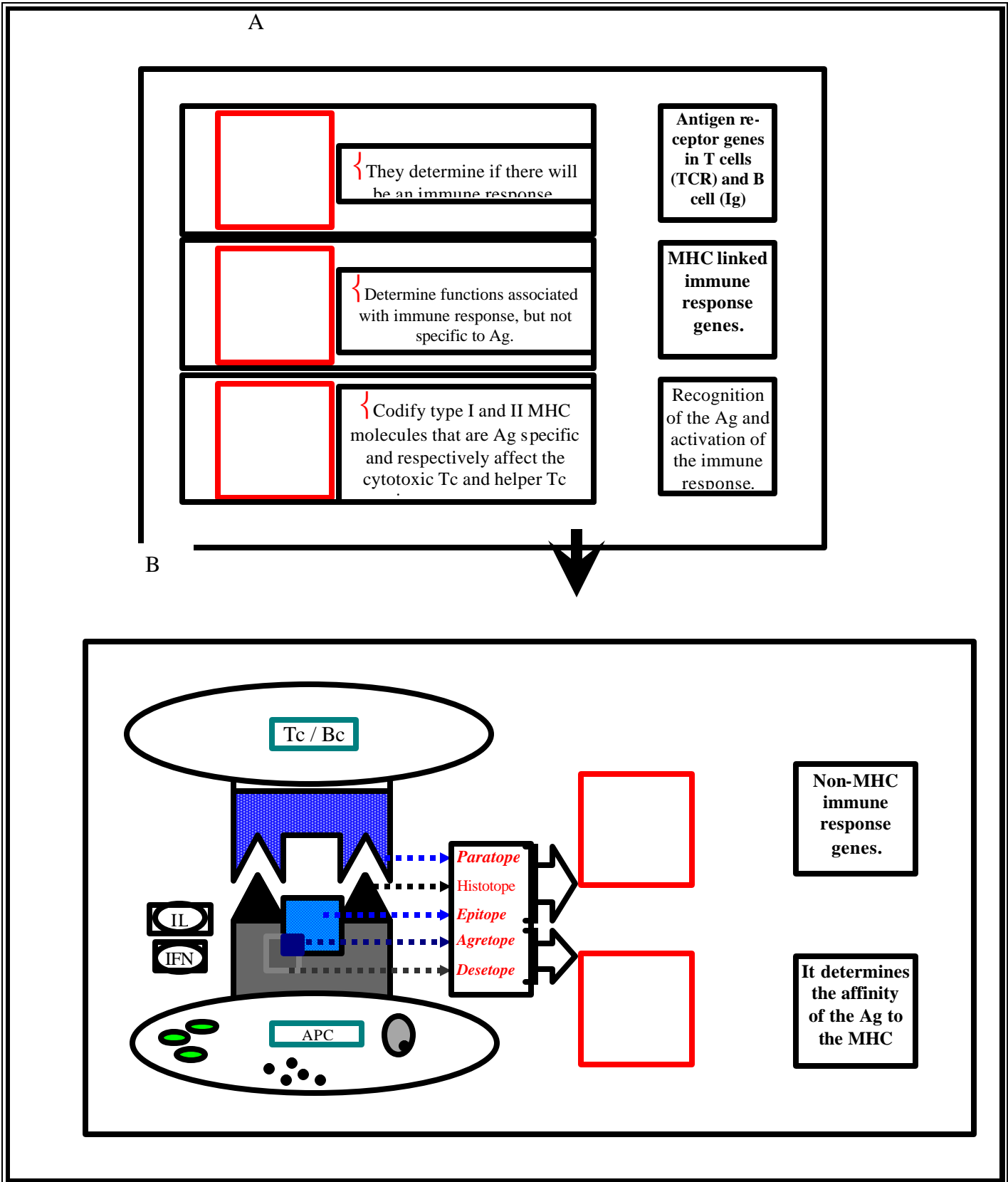


## Appendices



**Figure 1** – Panel about genetic control: in A, genetic groups and their respective functions; in B, parts of the receptor site involved in antigen presentation and their respective regulation genes.

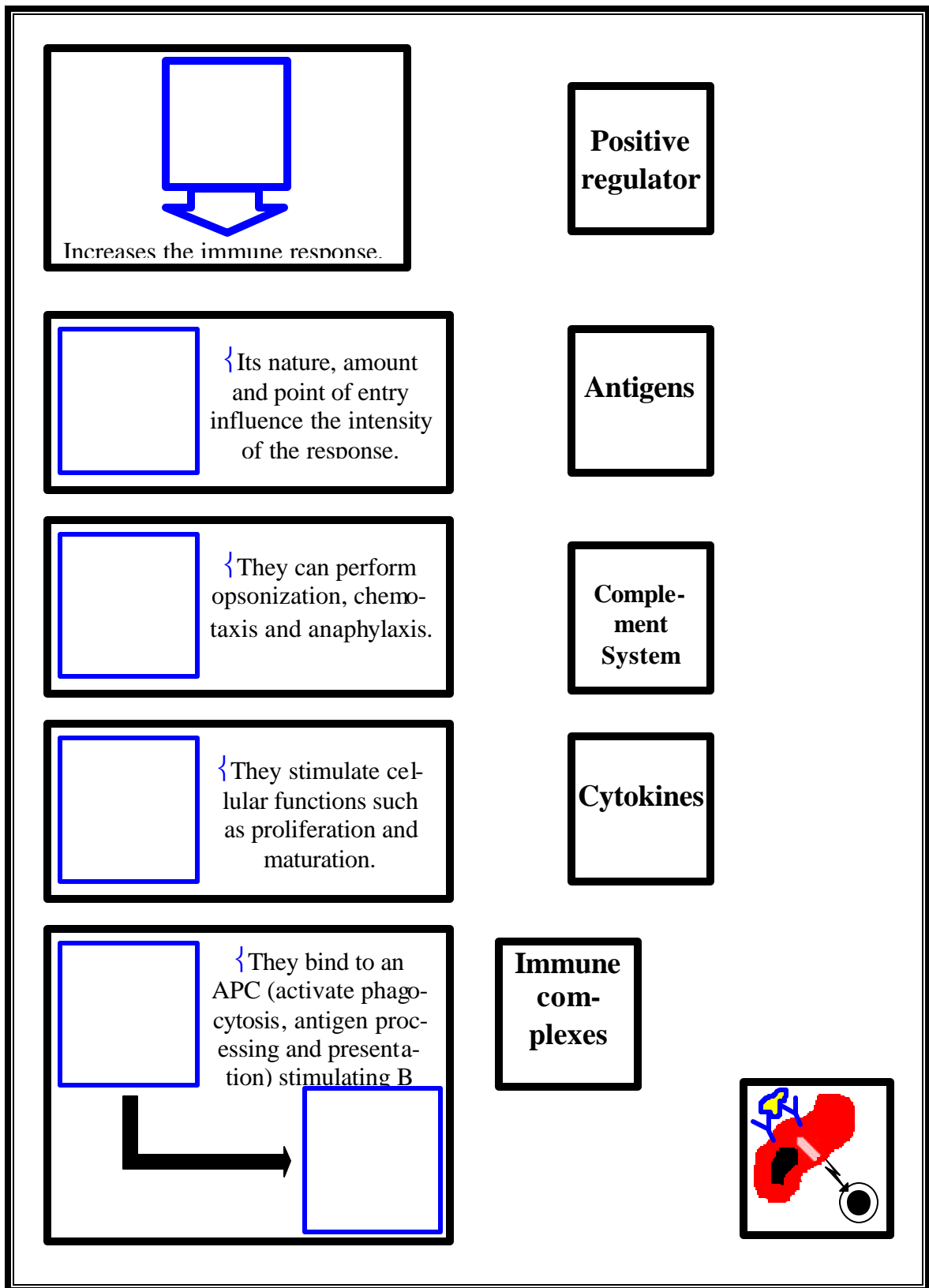
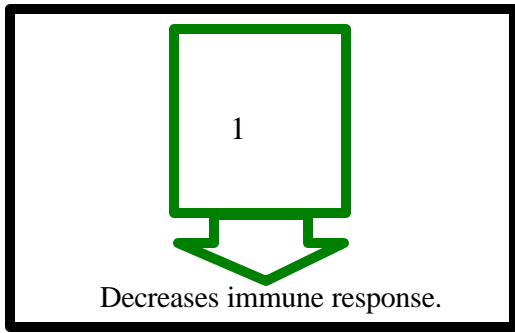
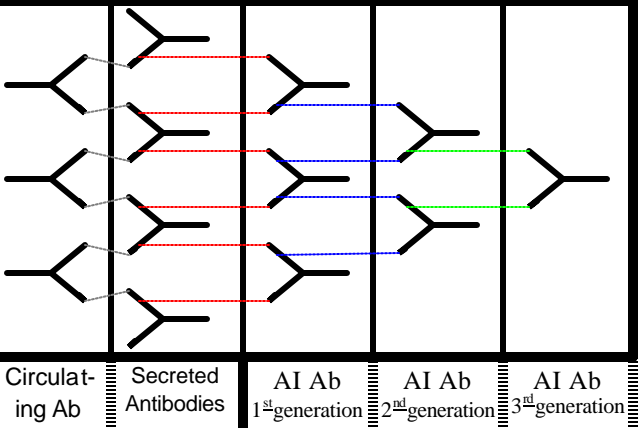


Fig. 2 – Panel about positive regulation.



2 } Autoantibodies against membrane Ig, secreted Ig and TCR, stimulate antibodies (anti-idiotypes) against their variable region: idiotype. This anti-idiotype antibodies (AI Ab) stimulate anti-anti-idiotypes but in a decreasing concentration, until the amount of antibodies is not enough to maintain the network.



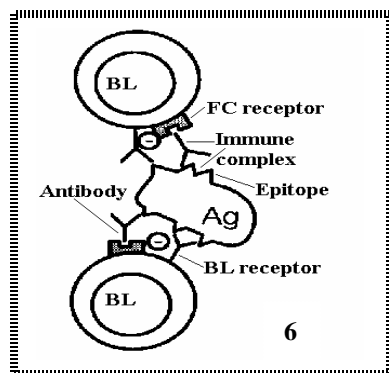
**Negative Regulation**  
1

**Idiotypic Net**  
2

**Natural Killer Cell**  
3

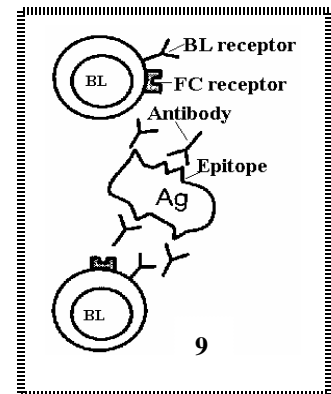
**Immune Complexes**  
4

**Cross Linking of Receptors**  
5



**Antibodies**  
7

**Antigenic Block**  
8



3 } These cells are CD8<sup>+</sup> and CD4<sup>-</sup> or CD8<sup>-</sup> and CD4<sup>+</sup>. They can act by direct competition for stimulation factors, direct cytotoxicity to Bc or Tc and by production of suppressor factors.

4 } When the B cell's Fc receptor is cross-linked to its antigen receptor by an antigen-antibody complex, there is inhibition of the B cell. This is called...  
6 ← 5

7 } They can suppress the production of antibodies through direct elimination of the antigen or...  
9 ← 8

Antibodies block the interaction between the epitopes of an antigen, an Ig (B cell receptor) or TCR (T cell receptors), which become unable to recognize the antigen.

Fig. 3 - Panel about negative regulation. BL - B lymphocyte; Ag - Antigen

UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL

DEPARTMENT OF MICROBIOLOGY

MEDICAL IMMUNOLOGY COURSE CBS - 06624

TEST A

REGULATION OF THE IMMUNE RESPONSE

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. ( ) The nature of the antigen, its dose and route of administration influence the type and magnitude of the immune response.
2. ( ) The antigen presentation carried out by professional APCs, which express large amounts of MHC II and costimulatory molecules, works as a negative regulatory mechanism of the immune response.
3. ( ) Polysaccharide and lipid antigens are the most powerful immunogens, inducing both cellular and humoral immunity.
4. ( ) The presence of maternal IgG, at the time of vaccination, may avoid the development of a protective response in a child.
5. ( ) Antibody feedback consists of the bond between the antibody and the antigen in a competitive manner with surface receptors of B cells.

6. ( ) The administration of anti-Rh antibody in the immediate puerperium to an Rh-negative mother prevents primary sensitization to the positive Rh of the fetus, since the antibodies given passively bind to the antigen, competing with B cells.
7. ( ) Suppressor T cells, which negatively modulate their own expression, are always CD8+ and CD4-.
8. ( ) Anti-idiotypic antibodies are those that bind to various regions of immunoglobulins and TCRs.
9. ( ) Corticosteroids, released during stressful situations, have an immunostimulatory action.
10. ( ) Stressful conditions may lead to the suppression of immune functions, thus reducing the capacity of an individual to recover from an infection.

**UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL**

**DEPARTMENT OF MICROBIOLOGY**

**MEDICAL IMMUNOLOGY COURSE CBS - 06624**

**TEST B**

**REGULATION OF THE IMMUNE RESPONSE**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. ( ) The subcutaneous or intradermal inoculation of antigens does not often induce an immune response.
2. ( ) The nature of the antigen, its dose and route of administration influence the type and magnitude of the immune response.
3. ( ) The absence of costimulatory molecules on the surface of antigen-presenting cells results in the ineffective activation of T lymphocytes and could lead to tolerance.
4. ( ) Antibodies given passively bind to the antigen, competing with B cells.
5. ( ) T-helper lymphocytes are subdivided into 2 populations according to the production of cytokines. Th2 negatively regulate the intensity of immune response through the secretion of IL-10.
6. ( ) Antibody feedback is a mechanism whereby IgG antibodies inhibit the differentiation of B cells by cross-linking the antigen receptor with the Fc receptor on the same cell.

7. ( ) Anti-idiotypic antibodies are those that bind to constant regions of immunoglobulins and TCRs.

8. ( ) The levels of maternal IgG remain high in children at least during the first six months of life. Children vaccinated within this period usually need several supplemental doses.

9. ( ) The immunosuppressive effect of corticoids released during stressful situations is one of the examples of functional interaction between the immune and the neuroendocrine systems.

10. ( ) The capacity to respond to a certain antigen is inherited and therefore varies among individuals.