Appendices
They determine if there will be an immune response.

Determine functions associated with immune response, but not specific to Ag.

Codify type I and II MHC molecules that are Ag specific and respectively affect the cytotoxic Tc and helper Tc immune response.

It determines the affinity of the Ag to the MHC.

Non-MHC immune response genes.

MHC linked immune response genes.

Recognition of the Ag and activation of the immune response.

Antigen receptor genes in T cells (TCR) and B cell (Ig)

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.
Increases the immune response.

- It’s nature, amount and point of entry influence the intensity of the response.
- They can perform opsonization, chemotaxis and anaphylaxis.
- They stimulate cellular functions such as proliferation and maturation.
- They bind to an APC (activate phagocytosis, antigen processing and presentation) stimulating B

Fig. 2 – Panel about positive regulation.
Decreases immune response.

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.

These cells are CD8⁺ and CD4⁺ or CD8⁻ and CD4⁺. They can act by direct competition for stimulation factors, direct cytotoxicity to Bc or Tc and by production of suppressor factors.

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...

They can suppress the production of antibodies through direct elimination of the antigen or...

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.
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.
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.