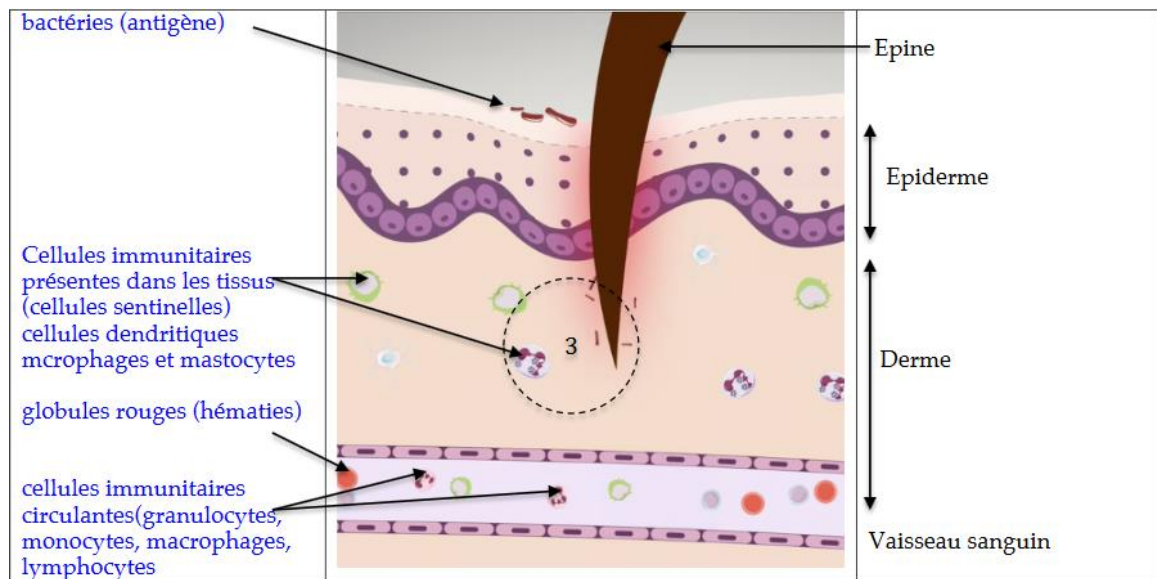


The People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research
University Center of Mila
Faculty of Science and Technology
Department of Natural and Life Sciences

TD 04 – Immunology correction

Exercise 1:



2- Sentinel cells, residing in tissues or circulating, monitor the body's integrity. Mast cells, dendritic cells, and macrophages have surface receptors capable of recognizing antigenic patterns of foreign elements that have entered the body. They are responsible for initiating the immune response.

3- Heat, redness, swelling, pain.

4- Macrophages, attracted by cytokines released, will phagocytize the antigens and present antigenic determinants associated with the MHC. This will lead to the recruitment of adaptive immune response actors: lymphocytes.

Exercise 2:

Comment on the cases of the three women and their newborns:

- **A:** No antibodies. No infection (therefore no immunization) in either the mother or the child.
- **B:** No antibodies at the beginning of pregnancy. The woman had never been in contact with *T. gondii* before her pregnancy. She became infected and developed immunity during pregnancy (between the 1st and 3rd months), indicating a primary infection due to the appearance of IgM. The antibody kinetics (IgM and IgG) are typical of a primary immune response. The IgG found in the newborn are maternal antibodies passively transmitted through the placenta.
- **C:** Infected before pregnancy, as she had antibodies from the first month without IgM. The antibody levels remained stable during the first three months, indicating a past infection and immunization. The woman had a second exposure to *T. gondii* during pregnancy, triggering an immune response. This was a secondary response, characterized by an increase in IgG without the appearance of IgM. The IgG found in the newborn are maternal antibodies passively transmitted through the placenta.

2) How to determine if the newborns are infected with *Toxoplasma*?

A new antibody test (IgG and IgM) should be conducted after 1 to 2 months:

- **Not infected:** IgG levels decrease because they were passively transmitted maternal antibodies that are gradually destroyed. IgM remains absent.
- **Infected:** IgG levels increase, and IgM appears, indicating active immunization.

Exercise 03:

- c) Rabbits C and D
- a) Rabbit C
- d) The serum of A contains anti-tetanus antibodies.