The People's Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

Mila University Center.

Institute of Natural and Life Sciences

Department of Natural and Life Sciences

TD 05 Immunology

Exercise 01:

Because of the specificity of the Ag-Ac reaction, it is exploited in many diagnostic analysis, identification, assay techniques, etc.

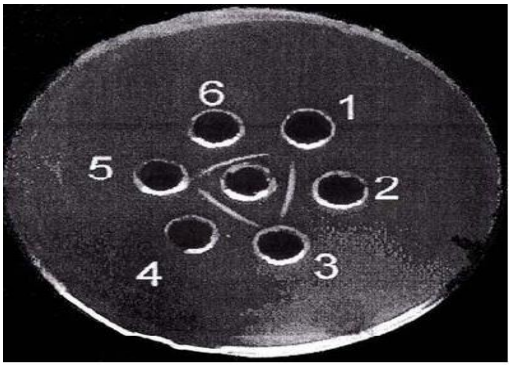
a- Depending on the result of the interaction, the analysis techniques are grouped into two categories. Which ones? Provide examples.

b- To characterize the vetellogenin protein from several species of Xenopus, the Ouchterlony technique (dual immunodiffusion on agar) was used. In a Petri dish containing an agarose gel, 7 wells were dug and receive:

➢ In the central well, serum from a rabbit that received an injection of vitellogenin from Xenopus laevis (a protein capable of inducing antibody synthesis in rabbits) several days before sampling ;

➢ In peripheral wells,

1. normal rabbit serum
2. female Xenopus laevis vitellogenin
3. male Xenopus laevis serum,
4. female Xenopus borealis vitellogenin
5. chicken egg albumin
6. female Xenopus tropicalis vitellogenin



1- Explain the principle of the technique.

2- Interpret the test result and then deduce whether the vitellogenin protein is specific to the species that makes it?

Exercise 2:

We want to know if two patients have been in contact with known antigens and if these antigens are present in them in the same proportions. For this, we are interested in the formation of immune complexes (specific antigen-antibody complex). The use of agar allows rapid migration of antigenic molecules, thus facilitating the formation and observation of such complexes.

From the exploitation of the document, provide the arguments allowing:

- Indicate whether these patients have the desired Ag1 antigens in their body;

- To specify which of patients 1 or 2 has the highest concentration of antigens.