

Immunological techniques assignment - lab report example

[Science](#), [Biology](#)



Immunological Techniques Assignment

Draw the results obtained from each of the three procedures. (what i should have gotten) Electrophoresis:

Radial immunodiffusion:

Ouchterlony:

Plate 2:

Plate 3:

2.)

Explain the origin of each of the precipitin arcs in each of the drawings.

Immunelectrophoresis:

We obtain arcs of precipitin showing the existence of Ag-Ab reactions.

Between whole serum and anti-whole serum we obtain more arcs showing more cross linking.

Radial Immunodiffusion:

We obtain precipitin rings of various sized around the antigen wells as a result of radial diffusion of the antigens. The ring diameters can be used to quantify the concentration of the antigens.

Ouchterlony:

In the 1st petri dish we obtain “ pattern of identity” between the antigen and the antisera walls.

In 2nd petri dish we obtain partial identity which means that the antigens are partially cross reactive.

In the 3rd pertri dish we obtain “ non-identity” which means that the antigen’s are immunologically different.

3.) Compare and contrast the three techniques for the types of information

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determined about the antibody-antigen systems studied.

Answer:

Immunoelectrophoresis is not very sensitive to Ag-Ab ratio and can be used to detect light chains in Ag excess. The length of the arcs gives the amount of immunoglobulin present which makes this process semi-quantitative. The process may be used to detect monoclonal proteins in both blood and urine. The radial immunodiffusion is a more widely used quantitative method and can be used to quantify immunoglobulins (including IgG subclasses) and serum proteins. However even though it is sensitive method the reaction time is long. Ouchterlony is also a qualitative method used to detect similarities between antigens. Just like RID the reaction time is long.

4.) What results would you expect if the immunoelectrophoresis gel were stained with a protein stain after the antigen-antibody reaction?

Answer: If the immunoelectrophoresis gel were stained with a protein stain after Ag-Ab reaction the arcs can be observed more clearly.

5.) In radial immunodiffusion, what would happen if not enough antibody were incorporated into the agarose? What would happen if a very low concentration of antigen were loaded into a well?

In both cases i. e. if not enough antibody were incorporated and very low concentration of antigen were loaded into a well, no precipitin line would be seen.