VISUAL DETECTION OF RINDERPEST VIRAL ANTIGENS ON SURFACE

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The possibility to observe visually the adsorption of a layer of protein upon glass slide and the subsequent attachment of antibodies by covering the slide with small metal particles was reported by Giaever (1973). A new general immunological test capable of detecting a protein in the range of 1 μg/ml was later described (Giaever, 1978). The test was limited to bovine serum albumin (BSA) and antibodies to BSA. The present paper describes the application of the test for the first time diagnosis of an animal virus, the rinderpest (RP) virus.

Tissue culture rinderpest vaccine (TCRPV) containing virus particles was obtained from Veterinary Biological and Research Institute, Hyderabad. Hyperimmune sera (HIS) against RP virus was raised in rabbits using TCRPV according to Scott (1967). The test was performed by the procedure of Giaever (1978) with slight modifications. A drop of TCRPV diluted in one ml of saline was placed on a slide (1.5 × 1.5 cm) and incubated for 10 min in moist chamber. Then the slide was rinsed for 10 sec in running water and after gentle blow air drying it was placed in a vial containing antibodies diluted 1:1 in normal rabbit serum. The vial with the slide(s) was shaken for 1 to 2 hr allowing a reasonable time for the immune reaction to take place. Then the slide(s) was removed with tweezers rinsed in running water for 10 sec and gently blow air dried. The slides were lightly sprayed upon with talcum powder. The slide(s) was then dipped into 0.1 mol/l citric acid for 5–10 min, rinsed in running water, gently dried and finally observed under microscope.

Two controls were used. One represented a slide with smear of virus-free tissue culture medium incubated with antibodies. The other consisted of a slide with TCRPV incubated with the normal rabbit serum. The rest of the procedure for both controls was performed normally.

In the case of positive virus-antibody reaction, the spot where the TCRPV drop was placed was found to be clear and around the spot particles were observed under microscope. In the control slides, the entire slide was full powder particles.

Until now, the test of Giaever (1978) was limited to BSA and BSA-antibodies. In the present paper the test has been utilized for the first time in the detection of an animal viral antigen i.e., RP virus. The test is simple and can be performed with minimum facilities.

References

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