ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA) FOR DETECTION OF ANTIBODIES TO HEMORRHAGIC FEVER WITH RENAL SYNDROME (HFRS) VIRUS IN SERA FROM *RATTUS NORVEGICUS*

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Enzyme-linked immunosorbent assay (ELISA) was developed to detect antibodies to hemorrhagic fever with renal syndrome (HFRS) virus in sera from *Rattus norvegicus*. Antigen for ELISA was prepared by β-propiolactone inactivated HFRS virus (strain SR-11) propagated in Vero cells. Sera were collected from house rats captured in endemic and non-endemic areas and white rats as experimental animals. The assay was carried out on antigen-coated polystyrene microplates by using substrate.

The results were summarized as follows:

1) In sera of experimental rats, ELISA antibody titers of 1 : 400 or greater were judged as positive, and the positive titers for house rats were set at 1 : 1,600 or higher.

2) The relative sensitivities of ELISA, IFA and complement fixation (CF) test were examined in the sera from house rats captured in the endemic focus. ELISA was 50 times more sensitive than IFA and 100 times more than CF test. The coefficients in combination of ELISA vs. IFA, ELISA vs. CF and IFA vs. CF were 0.61, 0.87 and 0.50, respectively. There was better agreement between ELISA and CF than ELISA and IFA.

3) Viral antigen was fractionated after sucrose gradient centrifugation, and antigenicity of each fraction was tested by ELISA. The antigenic activity was distributed with three peaks at buoyant densities of 1.21 (peak Ⅰ), 1.13 (peak Ⅱ) and 1.07 (peak Ⅲ). Peak Ⅰ and Ⅱ fractions reacted only to standard immune rat serum, and peak Ⅲ reacted to both standard immune rat serum and normal rat serum.

4) ELISA antibody titers of house rats using partially purifed antigen (peak Ⅰ or Ⅱ) were compared with those by crude antigen. However, no significant difference was obtained between the titers against these two antigens in either positive or negative sera.