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Technology DRDO 079: Detection of IgM antibodies for serodiagnosis of Japanese encepahalitis infection

Japanese encephalitis (JE) is the most important viral encephalitis of public health significance. It is endemic through out south east Asia, including India. This virus is a member of the genus Flavivirus, family Flaviviridae, and is transmitted between vertebrate hosts by mosquitoes, principally by Culex tritaeniorhynchus. Approximately 45,000 JE cases with 10,000 deaths were notified. Annually JE outbreaks are reported at regular interval from many parts of India. There is no effective therapy available against this disease. Therefore early diagnosis plays an important role in proper control and effective management of patients.

This kit is based on indirect ELISA principle, using recombinant protein antigen. The wells of ELISA plate was coated with recombinant JEV antigens. The JEV specific antibodies present in the test sera bind with antigen. The reaction was further processed with the addition of antihuman IgM-HRP conjugate. The reaction was observed through colorimetric interaction with chromogen. Color development is indicative of the presence of JE virus specific IgM antibodies in the test sample.

The cross reactivity with other co-circulating members of flavivirus grous were ruled out by employing recombinant antigen thereby making the kit more specific for JE virus only.

This kit is validated with more than 120 clinical samples (Serum and CSF), collected from different regions in India during outbreak of JE Virus. It revealed >85% correlation with commercially available diagnostic kits and ≥ 95 % Confidence in the test results.

This kit will be useful for early diagnosis of Japanese Encephalitis infection with high degree of sensitivity and specificity.

Development Status

- The test is currently in field testing or trials. These tests should be completed in 1-3 months.

IP Status

- An Indian patent is pending.

Partner Opportunities

- Manufacturing licensing agreements.
- Sales through distribution channels.

Innovator

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