

Diagnostic ELISA kit for detection of Dengue virus

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Technology Domain: Diagnostics

Disease Area: Communicable Diseases
– Vector Borne Diseases (other than Malaria)

Technology Readiness level (TRL):

The technology has been standardized for up scaling.

It is currently in regular production and **the kits are being supplied to sentinel surveillance hospitals and apex referral laboratories under national program.**

Need and utility of the Technology from Public health perspective:

Dengue can range from subclinical infection to severe illness such as Dengue Haemorrhagic Fever or Dengue Shock Syndrome, with around 30,000 deaths annually. Early and accurate diagnosis is crucial, as there is no specific treatment or vaccine. Dengue virus-specific IgM becomes detectable five days after symptom onset and remains for up to six months, making it a key diagnostic marker when interpreted alongside clinical symptoms like fever, headache, and joint pain. The Dengue IgM Capture ELISA, developed by ICMR-NIV, is designed for qualitative detection of these antibodies in symptomatic patients.

Validation Status and outcome:

Performance of the test was evaluated by Christian Medical College (CMC), Vellore. The kit has a diagnostic sensitivity of 98.53% and diagnostic specificity of 98.84%. The kit has high inter and intra assay reproducibility.

Market Potential:

The market potential for Diagnostic ELISA kits targeting Dengue virus detection is both substantial and rapidly expanding, driven by the rising global burden of dengue fever—particularly in tropical and subtropical regions where outbreaks are frequent and severe. With over 390 million infections annually and approximately 96 million clinical cases, the need for reliable diagnostic tools is more critical than ever. Among these, IgM-based ELISA kits stand out due to their ability to detect early-stage infections, making them essential for timely clinical intervention and effective outbreak management. As public health systems increasingly prioritize preventive care and rapid response capabilities, IgM ELISA kits are positioned to play a pivotal role in global dengue surveillance and diagnostics.

Publication: Gadkari DA, Shaikh BH (1984) IgM Antibody Capture ELISA in the diagnosis of Japanese encephalitis, West Nile & dengue virus infections. Indian J Med Res. 80: 613-9. ([PMID: 6099824](https://pubmed.ncbi.nlm.nih.gov/6099824/)).

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