

Peptide-based diagnostic technology for accurate differentiation of Zika and Dengue infections

A peptide-based immunodiagnostic method that enables reliable differentiation between Zika virus (ZIKV) and Dengue virus (DENV) infections using a standard blood sample.

// TECHNOLOGY OVERVIEW

Accurate serological diagnosis of flavivirus infections remains challenging due to antibody cross-reactivity between Zika and Dengue viruses, leading to inconclusive results, misdiagnosis and downstream impacts on patient management and public-health surveillance — particularly in endemic and outbreak settings.

This innovation presents a diagnostic breakthrough for rapidly and accurately identifying flavivirus infections using highly specific peptide-based detection methods, looking at how virus-specific antibodies in the blood react to carefully selected viral fragments to create a clear signal for each infection.

There is a clear demand for diagnostics that are:

- More specific to differentiate between closely related flaviviruses
- Capable of early-stage detection from blood samples
- Compatible with scalable, low-cost assay platforms (e.g. lateral flow immunoassay, ELISA)

// OUR INNOVATION

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|---|--|
|  Epitope-level targeting
Targets virus-specific linear B-cell epitopes rather than broadly reactive viral antigens. |  Discriminatory read-out
Uses a peptide response ratio (Zika vs Dengue) as the diagnostic signal. |
|  Solves cross-reactivity
Directly addresses the cross-reactivity problem common to existing serological assays. |  Early acute detection
Demonstrated ability to detect infections during the early (acute) stage. |

// OUR VALUE PROPOSITION

Clear differentiation, reduced false positives

Demonstrated ~80% sensitivity and ~85% specificity, enabling more confident diagnosis and interpretation. Novel epitopes validated to elicit differential antibody responses.

Product-ready format

Compatible with standard immunoassay platforms such as ELISA and microarray-based systems, lowering development barriers.

Scalable and cost-effective

Synthetic peptides avoid reliance on whole viral antigens or complex recombinant proteins.

// TECHNOLOGY DEVELOPMENT STATUS

TRL
3

Early-stage validation

BASIC RESEARCH

DEPLOYMENT

- Peptide epitopes identified and characterised
- Demonstrated diagnostic performance in patient samples
- Ready for assay development and further validation

PATENT

JP7631219B2 (granted). Pending across EP, SG, US and WO jurisdictions.

PUBLICATION

Amrun SN et al., *Clinical & Translational Immunology* (2019).

CATEGORIES

Healthcare · Diagnostics ·
Infectious Diseases · Flavivirus
Serology · Point-of-Care

Interested in this technology?

Connect with the A*IDL Tech-Biz team to explore licensing, co-development and translational opportunities. Available for licensing, co-development & translational research, and preclinical & clinical development partnerships.



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