

**LETTER TO THE EDITOR**

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# Apropos: 'Preliminary evaluation on the efficiency of the kit Platelia Dengue NS1 Ag-ELISA to detect dengue virus in dried *Aedes aegypti*: a potential tool to improve dengue surveillance'

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## Abstract

Only simple, point-of-care, assay formats of the Platelia Dengue NS1 Ag-ELISA would be suitable to identify Dengue virus in *Aedes aegypti* mosquitoes in dengue-endemic areas lacking sophisticated laboratory infrastructure and trained laboratory personnel.

**Keywords:** Dengue, NS1 antigen, ELISA kit, Surveillance, Point-of-care tests

## To the Editor

We compliment the team of investigators from Brazil for their meticulous evaluation of the Platelia Dengue NS1 Ag-ELISA assay to detect dengue virus (DENV) in dried *Aedes aegypti* mosquitoes [1] because it would be extremely valuable for disease surveillance in communities. Nevertheless, for the maximum utility of the technique, it would be crucial to offer it in a simple, 1–2 step, point-of-care assay format.

The perspective format should not only be user friendly but should not rely on availability of well-equipped laboratory premises and trained laboratory personnel. In several urban areas and remote locations in DENV-endemic, resource-poor countries, laboratory infrastructure is poor and private clinical laboratories might be the only ones serving a vast population. The inadequate building capacity, pathology and laboratory methods training, supply of reagents and maintenance of existing equipment have been far from ideal [2].

The utility of a rapid-point-of care laboratory diagnostic employing a commercial NS1 Ag STRIP (Biorad-Laboratory, Marnes-la-Courquette, France) were encouraging in Taiwan. The Dengue NS1 Ag STRIP was a useful tool for an early dengue diagnosis. Its use increased the diagnostic sensitivity and decreases the need of examination of convalescent

samples [3]. Furthermore, commercial availability of the point-of-care assay kits like the Dengue Duo, the one-step NS1 Ag and IgM/IgG test (Standard Diagnostic Inc., Ingbert, Germany) has been an asset during disease outbreaks. Its utility was immense among the patients presenting with different phases of primary or secondary dengue infection at a private hospital located in Delhi, India during the 2010 outbreak [4].

Last but not least, basic studies should also be undertaken with dried *Aedes aegypti* mosquitoes [1] to establish the utility of the future sensor based technology to diagnose DENV in mosquitoes. Employing an all-optical fiber sensor based on Localized Surface Plasmon Resonance (LSPR) and specular reflection from gold nanoparticles (AuNPs), it was able to detect NS1 antigen at different concentrations, with a limit of quantification estimated to be 0.074 µg/ml = 1.54 nM. The performance sensor for DENV diagnosis in the acute phase of the infection was encouraging [5].

## Competing interests

The authors declare that they have no competing interests.

## Authors' contributions

SCA: Collected the references and informal discussion with clinicians. NA: Drafted the manuscript including editing of the text. Both authors read and approved the final manuscript.

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