

# Simple, rapid, and affordable point-of-care test for the serodiagnosis of typhoid fever.

[Pastoor R](#), [Hatta M](#), [Abdoel TH](#), [Smits HL](#).

KIT Biomedical Research, Royal Tropical Institute/Koninklijk Instituut voor de Tropen (KIT),  
Amsterdam, The Netherlands.

We developed a point-of-care test for the serodiagnosis of typhoid fever in the format of an immunochromatographic lateral flow assay. The flow assay for typhoid fever is based on the detection of *Salmonella enterica* serotype Typhi lipopolysaccharide-specific immunoglobulin M (IgM) antibodies. The assay was evaluated on serum samples collected in a hospital in South Sulawesi, Indonesia, where typhoid fever is endemic, and the results were compared with culture and Widal test. The sensitivity of this typhoid fever IgM flow assay for samples collected at 1st diagnosis from patients with culture-confirmed typhoid fever was determined to be 59.3%. The sensitivity ranged from 41.2% to 89.5%, depending on the duration of illness. A specificity of 97.8% was calculated based on results obtained for patients with clinical suspicion of typhoid fever that was later excluded. The assay is ideal for use as a point-of-care test in health care centers that lack the expertise and facilities to perform culture or the less specific Widal test. Because of its simplicity, the assay may also be used as a field test in remote areas.

Keywords: Typhoid fever; Point-of-care; Serology; Diagnosis; Culture; Widal