

Evaluation of *Salmonella typhi* dipstick for detection of IgM antibodies from suspect Typhoid fever patient P-5

M. Hatta¹, L. Chairuddin¹, H.L. Smith²

Abstrak

Dipstick *Salmonella typhi* telah dikembangkan untuk deteksi antibodi IgM spesifik terhadap *S. typhi* pada manusia. Pada studi ini, telah diperiksa 195 sampel serum dari pasien tersangka demam tifoid dengan masa demam $10,1 \pm 0,5$ hari menggunakan metode dipstick dan kultur darah. Hasil yang diperoleh adalah dipstick positif 72 sampel (36,9%) dan kultur darah positif 29 sampel (14,9%). Pada 113 sampel dengan masa demam kurang dari 10 hari, hasil positif pada pemeriksaan dipstick adalah 51 sampel (45,1%) dan kultur sebesar 21 sampel (18,6%). Dari hasil tersebut di atas, pada hari ke 10 demam, metode dipstick lebih sensitif dibandingkan dengan kultur darah *S. typhi*. Hasil positif dipstick secara bermakna lebih tinggi dari kultur darah (tes statistik Fischer; $p < 0,01$). Disimpulkan, dipstick *S. typhi* mungkin bermanfaat untuk deteksi antibodi IgM untuk kasus tersangka demam tifoid, dan dapat digunakan untuk studi epidemiologi infeksi *S. typhi*. Studi lanjutan untuk membandingkan metode dipstick dengan PCR, serta untuk melihat spesifitas metode ini masih berlangsung.

Abstract

Salmonella typhi Dipstick have been developed for detection of IgM antibodies specific against *S. typhi* on human. In this study, we examined 195 sera from suspect typhoid fever patients with the mean of fever 10.1 ± 0.5 days by the Dipstick method and compared with blood culture. From 195 suspected typhoid fever, we found positive to Dipstick and culture were 72 samples (36.9%) and 29 samples (14.9%), respectively. On cases with fever less than 10 days, from 113 samples, the positive rate for Dipstick and culture were 51 samples (45.1%) and 21 (18.6%), respectively. From data shown above, the Dipstick method is more sensitive in detecting IgM antibodies than blood culture detection of *S. typhi* in day 10 after fever. Also, the positivity rate of Dipstick was significantly higher than the positivity rate of blood culture (fisher exact test, $p < 0.01$). In conclusion, *S. typhi* Dipstick may be useful for detection IgM antibodies from suspected typhoid fever patients and may benefit as epidemiological tool for *S. typhi* infection. More study is still in progress to compare the Dipstick method and PCR from blood and to explore the specificity of this method.

¹Microbiology Department, Hasanuddin University, Ujung Pandang, Indonesia

²Royal Tropical Institute, The Netherland.