

# Uji sensitivitas dan spesifisitas kit diagnostik SD bioline dengue duo antigen NS1 dan antibodi IgM/ IgG terhadap infeksi DENV-3 di Jakarta, Indonesia = Examination of sensitivity and specificity of SD bioline dengue duo NS1 antigen and IgM/ IgG antibody diagnostic kit in DENV-3 infection in Jakarta, Indonesia

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## Abstrak

Infeksi dengue yang ditularkan melalui gigitan nyamuk *Aedes aegypti* kepada manusia kerap terjadi di area tropis dan subtropis. Oleh karena manifestasi klinis yang tidak spesifik, berbagai Rapid Diagnostic Tests (RDTs) termasuk SD Bioline Dengue Duo Antigen NS1 dan Antibodi IgM/IgG dibuat untuk memberikan diagnosis dini infeksi dengue yang lebih akurat.

Meskipun beberapa studi telah dilakukan untuk menguji sensitifitas dan spesifitas kit tersebut di berbagai negara tetapi informasi mengenai validitasnya dalam mendeteksi keberadaan protein NS1 dari DENV-3 belum dilaksanakan di Indonesia. Pada penelitian ini 105 serum dari pasien yang diduga menderita infeksi dengue diambil dan diuji menggunakan SD Bioline Dengue Duo. Standar baku emas yang digunakan pada penelitian ini adalah RT-PCR dan/atau isolasi virus di sel C6/36 dan atau kenaikan titer antibodi.

Hasil penelitian ini menunjukkan rasio deteksi NS1 berbanding terbalik dengan keberadaan antibodi IgM. Sensitivitas, spesifisitas, PPV, dan NPV menunjukkan 81.25%, 100%, 100%, dan 91.89% pada masing-masingnya di awal demam pasien yang terinfeksi DENV-3. Oleh karena itu, SD Bioline Dengue Duo sangat direkomendasikan untuk diagnosis infeksi DENV-3 karena cepat, mudah digunakan, sangat sensitive, spesifik, dan memiliki PPV dan NPV yang tinggi.

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Dengue infection is transmitted through the bite of *Aedes aegypti* mosquitoes to human particularly occurs in tropic and subtropic area. Having unspecific spectrum of clinical manifestations, various rapid diagnostic tests (RDTs) including SD Bioline Dengue Duo NS1 antigen and IgM/IgG antibody were made to give early diagnosis of acute dengue infection.

Although several studies have been conducted to examine the sensitivity and spesificity of the kits in various countries, its validity to detect the presence of DENV-3 NS1 antigen has not been held in Indonesia. In total, 105 sera from patients suspected of suffering dengue infection were collected and subjected to SD Bioline Dengue Duo and RT-PCR test as the gold standard.

The result of this study showed NS1 detection rate was inversely proportional to the presence of IgM antibodies. The sensitivity, spesificity, PPV, and NPV showed 81.25%, 100%, 100%, and 91.89% respectively at the beginning of fever in DENV-3 infected patients. Thus SD Bioline Dengue Duo is highly recommended for diagnosis of DENV-3 infction as it is rapid, easily applicable, sensitive, highly spesific and has great PPV and NPV.