

UJI SENSITIFITAS: “*IN HOUSE* qPCR KIT” UNTUK DETEKSI SEROTIPE VIRUS DENGUE

Indaryati
21/476463/PBI/01766

INTISARI

Kasus dengue masih menjadi permasalahan kesehatan yang harus mendapatkan penanganan. Ketepatan dan kecepatan diagnosis sangat diperlukan untuk mempercepat tatalaksana dan terapi terhadap pasien. Pemeriksaan *multiplex qRT-PCR* lebih menghemat waktu, reagensia, dan volume sampel karena dapat membandingkan/mendeteksi beberapa amplicon (produk *PCR*) secara simultan dalam satu kali reaksi (*running*), selain itu dapat mengetahui produk *PCR* secara kuantitatif. Tujuan dari penelitian ini adalah untuk pengembangan metode deteksi virus dengue di BBLabKesMas Yogyakarta dan mengetahui sensitivitas “*In house qPCR Kit*” deteksi serotipe virus dengue. Penelitian dilaksanakan di Laboratorium Mikrobiologi dan Biomolekuler BBLabKesMas Yogyakarta. Sampel pada penelitian ini adalah material biologi tersimpan di Laboratorium Mikrobiologi dan Biomolekuler BBLabKesMas Yogyakarta yang berasal dari fasilitas pelayanan kesehatan di Kabupaten Grobogan Provinsi Jawa Tengah. RNA hasil isolasi serum penderita suspek infeksi virus dengue dilanjutkan dengan deteksi secara molekuler untuk konfirmasi positif virus dengue menggunakan kit *multiplex* qPCR untuk arbovirus. Sampel positif virus dengue selanjutnya digunakan untuk uji sensitivitas kit serotipe *in house* qPCR. Hasil penelitian menunjukkan *positivity rate* infeksi virus dengue adalah 54,49%. Uji serotipe virus dengue menggunakan kit qPCR komersial dan *in house* qPCR berturut-turut adalah 89,01 dan 14,29%, data ini menunjukkan kit *in house* qPCR yang digunakan kurang sensitif. Pada analisis deteksi serotipe virus dengue, ditemukan nilai CT yang sama antara kit qPCR komersial dan *in house* qPCR dengan kuantitas sampel 10X lebih tinggi pada kit *in house* qPCR. Berdasarkan hasil yang diperoleh, dapat disimpulkan “*in house qPCR kit*” yang digunakan pada penelitian ini tidak lebih sensitif jika dibandingkan kit qPCR komersial.

Kata kunci: *multiplex*, *qRT-PCR*, serotipe, dengue

SENSITIVITY TEST OF “IN HOUSE qPCR KIT” FOR DENGUE VIRUS SEROTYPE

Indaryati
21/476463/PBI/01766

ABSTRACT

Dengue fever remains a health problem that requires treatment. Accurate and rapid diagnosis is essential to expedite patient management and therapy. Multiplex qRT-PCR saves more time, reagents, and sample volume because it can compare/detect several amplicons (products) PCR) simultaneously in one reaction (running), in addition to being able to quantitatively identify PCR products. The purpose of this study was to develop a method for dengue virus detection at BBLabkesmas Yogyakarta and to determine the sensitivity of the method “In house qPCR Kit” dengue virus serotype detection. The study was conducted at the Microbiology and Biomolecular Laboratory of BBLabKesMas Yogyakarta. The samples in this study were biological materials stored at the Microbiology and Biomolecular Laboratory of BBLabKesMas Yogyakarta originating from health care facilities in Grobogan Regency, Central Java Province. RNA from serum isolation from patients suspected of dengue virus infection was followed by molecular detection to confirm positive dengue virus using a multiplex qPCR kit for arboviruses. The positive dengue virus samples were then used for the sensitivity test of the in-house qPCR serotype kit. The results showed a positivity rate of dengue virus infection of 54.49%. The dengue virus serotype test using commercial and in-house qPCR kits was 89.01 and 14.29%, respectively, this data indicates that the in-house qPCR kit used was less sensitive. In the analysis of dengue virus serotype detection, the same CT value was found between the commercial and in-house qPCR kits with 10X higher sample quantity on the kit in house qPCR. Based on the results obtained, it can be concluded that “In-house qPCR kit” used in this study was not more sensitive when compared to commercial qPCR kit.

Keywords: multiplex, qRT-PCR, serotype, dengue