Pengembangan uji serologi igm antibody-capture enzyme linked immunosorbent assay mac elisa untuk virus japanese encephalitis strain nakayama dan virus chikungunya isolat csb04010 = Development of igm antibody-capture enzyme linked immunosorbent assay mac elisa for japanese encephalitis virus strain nakayama and chikungunya virus isolate csb04010 / Aghnianditya Kresno Dewantari

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Abstrak

ABSTRAK
Arbovirus (arthropode-borne virus) yang timbul dan timbul kembali telah memengaruhi berbagai aspek kehidupan manusia. Infeksi arbovirus terbanyak di Indonesia: dengue, Japanese encephalitis (JE) dan chikungunya (CHIK) menyebabkan kasus luar biasa tiap tahun. Ketersediaan metode deteksi JE dan CHIK sangat terbatas di Indonesia. Pengembangan in-house IgM antibody-capture Enzyme Linked Immunosorbent Assay (MAC ELISA) dengan antigen local terinaktivasi akan meningkatkan deteksi dan pemantauan dengan meningkatkan spesifisitas dan sensitivitas. Antigen diproduksi dalam kultur sel dengan sel BHK-21 dan sel Vero kemudian diinaktivasi dengan gamma-irradiasi dan 0,01% beta-propiolakton. Kinerja Antigen dievaluasi dengan uji MAC ELISA dan titer virus dihitung dengan uji plak. Virus Japanese encephalitis dan chikungunya terinaktivasi pada 20 kGy gamma- irradiasi dan 0,01% BPL. In-house MAC ELISA telah dioptimisasi dengan inkubasi 2 jam. Kit in-house MAC ELISA yang telah dikembangkan berguna untuk deteksi dan pemantauan JE dan Chik dengan fasilitas terbatas.
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ABSTRACT
The emerging and re-emerging arthropod-borne viruses (arboviruses) have effected many aspects of human existence. Three major arbovirus infection in Indonesia: dengue, Japanese encephalitis (JE) and chikungunya (CHIK) causes numerous outbreaks each year. However, availability of detection methods for JE and CHIK are very limited in Indonesia. Development of in-house IgM antibody-capture Enzyme Linked Immunosorbent Assay (MAC ELISA) with inactivated local antigen will improve detection and surveillance capability across Indonesia by increasing its specificity and sensitivity. Antigens were produced in cell culture using BHK-21 cells and Vero cells then inactivated using gamma-irradiation and 0.01% beta-propiolactone (BPL). Antigen performance was evaluated using MAC ELISA and virus titer were calculated using plaque assay. Japanese encephalitis virus and chikungunya virus was inactivated at 20 kGy with 0.01% BPL. Optimized in-house MAC ELISA protocol using these antigen has been developed. Developed in-house MAC ELISA kit will be beneficial for detection and surveillance of JE and CHIK with limited facility.