Uji Aktivitas Antiviral -Mangostin Garcinia mangostana Linn. terhadap Virus Chikungunya pada Sel HepG2 = Antiviral Activity Test of -Mangostin Garcinia mangostana Linn. against Chikungunya Virus in HepG2 Cells

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Abstrak

Chikungunya telah diidentifikasi di lebih dari 60 negara di Asia, Afrika, Eropa dan Amerika. Indonesia merupakan negara endemis chikungunya. Gejala yang ditimbulkan oleh chikungunya yaitu arthralgia yang dapat bertahan selama beberapa tahun. Senyawa -mangostin ditemukan pada xanthone yang diambil dari perikarp buah manggis dan diketahui memiliki aktivitas antiviral terhadap virus Hepatitis C dan virus Dengue. Berdasarkan penyebaran virus yang cepat ke daerah baru, peningkatan jumlah penderita, dan potensi timbulnya cacat permanen, dibutuhkan agen antiviral terhadap infeksi CHIKV. Oleh karena itu, uji aktivitas antiviral -mangostin terhadap virus chikungunya pada sel HepG2 dilakukan. Senyawa -mangostin terlebih dahulu diuji toksisitasnya terhadap sel HepG2 dengan MTT assay. Selanjutnya dilakukan uji antiviral dengan konsentrasi -mangostin sebesar 3,125 M, 6,25 M, dan 12,5 M pada pre—treatment, full treatment, dan post—treatment. Supernatan sampel diambil dan titer virus diukur dengan metode plaque assay. Hasil uji toksisitas senyawa -mangostin menunjukkan nilai CC50 sebesar 10,98 M. Hasil uji antiviral menunjukkan adanya penurunan titer virus dalam concentration-dependent manner pada tiga perlakuan. Titer virus chikungunya berkurang lebih banyak pada full treatment (IC50 = 6,46 M) dan post—treatment (IC50 = 6,99 M) dibandingkan dengan pre—treatment (7,22 M). Pemberian senyawa -mangostin memiliki efek antiviral dengan menghambat replikasi CHIKV.

.....Chikungunya has been identified in more than 60 countries in Asia, Africa, Europe, and America. Indonesia is endemic country for chikungunya. The symptom is arthralgia which can last several years. -mangostin is found in xanthones from mangosteen pericarp and is known to have antiviral activity against Hepatitis C virus and Dengue virus. Based on the rapid spread of virus to new areas, increasing number of sufferers, and potential cause of permanent disability, antiviral agents against CHIKV are needed. Antiviral activity test of -mangostin against CHIKV on HepG2 cells was carried out. -mangostin was tested for its toxicity against HepG2 cells by MTT assay. Furthermore, the antiviral test was carried out with 3,125 M, 6,25 M, and 12,5 M -mangostin in pre—treatment, full treatment, and post—treatment. The supernatant were taken and the virus titer was measured by plaque assay. Toxicity test of -mangostin showed CC50 value of 10,98 M. Antiviral test results showed decrease in virus titer (concentration-dependent manner). CHIKV titer reduction was more effective in full treatment (IC50 = 6,46 M) and post—treatment (IC50 = 6,99 M) compared to pre—treatment (IC50 = 7,22 M). This suggests that -mangostin has antiviral effect by inhibit CHIKV replication