

INTISARI

Pegagan merupakan kekayaan alam yang telah banyak digunakan sebagai bahan baku obat tradisional. Tanaman ini mengandung senyawa metabolit sekunder asiatikosida yang secara alami dihasilkan dalam jumlah kecil sehingga dibutuhkan senyawa untuk meningkatkan produksinya. Asam metil jasmonat (MeJA) diketahui sebagai senyawa penting dalam produksi asiatikosida. Penelitian ini bertujuan mengetahui pengaruh MeJA terhadap produksi metabolit sekunder pada kalus pegagan.

Daun pegagan steril dikulturkan pada media padat Murashige–Skoog (MS) yang sudah diberi zat pengatur tumbuh *2,4-dicholophenoxyacetic acid* (2,4-D) 2 ppm. Kalus hasil kultur diberi perlakuan MeJA selama 1 jam pada media MS cair dan disubkultur ke media MS cair baru selama 7 hari. Sel kalus dianalisis secara kualitatif menggunakan mikroskop *inverted* untuk mengetahui pengaruh MeJA terhadap bentuk dan jumlah sel. Kalus dalam media diekstraksi dengan maserasi ultrasonik dan senyawa dideteksi dengan KLT menggunakan fase diam silika gel 60 F₂₅₄, fase gerak kloroform p.a : metanol p.a : air (65:25:4) v/v dan kloroform p.a : metanol p.a : etil asetat (5:4:1) v/v, serta pembanding *Titrate Extract Centella asiatica* (TECA).

Pemberian MeJA 100 µM tidak berpengaruh terhadap produksi metabolit sekunder berdasarkan hasil KLT, tetapi berpengaruh dalam jumlah kalus secara seluler. Kalus dengan perlakuan MeJA menghasilkan jumlah sel yang lebih banyak dibandingkan sel kalus kontrol.

Kunci : *Centella asiatica* (L.) Urb., kultur kalus, elisitor, asam metil jasmonat.

ABSTRACT

Centella asiatica is a natural wealth that has been widely used as a raw material of traditional medicine. This plant contains nutritious secondary metabolite compounds such as asiaticosida which are naturally produced in small amounts so that compounds are needed to increase their production, such as elicitors. The methyl jasmonic acid (MeJA) is known to be an important elicitor in the production of asiaticocide. This research aims to know the influence of the MeJA towards the production of secondary metabolites in pegagan callus.

Pegagan sterile leaves is cultured on solid medium Murashige-Skoog (MS) which has been given a growth regulator substance 2,4-dichlorophenoxyacetic acid (2,4-D) 2 ppm. The cultured callus was treated for 1 hour on a liquid MS medium and subcultured to a new liquid MS medium for 7 days. Callus cells were analyzed qualitatively using inverted microscope to determine the effect of MeJA on the shape and number of cells. The callus in the medium was extracted with ultrasonic maseration and the compound was detected by TLC using stationary phase silica gel 60 F₂₅₄, mobile phase chloroform pa: methanol pa: water (65: 25: 4) v / v and chloroform pa: methanol pa: ethyl acetate (5: 4: 1) v / v, as well as the comparison of Titrated Extract *Centella asiatica* (TECA).

The administration of MeJA 100 μ M has no effect on the production of secondary metabolites based on TLC results, but has an effect on cell callus numbers. Callus with MeJA treatment produces more cell number than control callus cells.

Keywords: *Centella asiatica* (L.) Urb., callus culture, elicitor, methyl jasmonic acid