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Abstract
Cinnamomum kanehirae Hay., an endemic tree species of Lauraceae in Taiwan, has became endangered due to overlogging. The main objectives of this study were to establish an in vitro regeneration system and cell suspension culture condition of C. kanehirae.

Callus induction was obtained by culturing spring buds and stem segments on MS basal medium supplemented with 3 mg/L BA and 4 mg/L 2,4-D in dark for 3 weeks. The calli were maintained and proliferated on MS basal medium supplemented with 1 mg/L BA, 1 mg/L NAA and 150 mg/L citric acid. Culturing the buds elongation obtained from spring buds on WPM basal medium supplemented with 0.1 mg/L BA or 0.3 mg/L GA3 for 4 weeks. The multiple shoots were obtained by subculturing on WPM basal medium supplemented with 1 mg/L BA.

Cells derived from callus first cultured on MS basal liquid medium supplemented with 1 mg/L BA and 1 mg/L NAA on a rotation shaker in light condition. then, 0, 10, 100, 500 μM SA or JA was added into the medium on the 12th day, which is the mid point of exponential growth phase. The suspension cells was extracted and analyzed by HPLC after 6 more days of induction. Extract from suspension cells treated with 100, 500 μM SA showed a new peak suggesting that SA was able to elicit production of at least one new secondary metabolite on suspension cell of C. Kanehirae. However, high dosage (500 μM) SA treatment, not only suppresses production of the new product, but also decrease the other two peaks. In contrast, 10 μM JA enhanced two products (peak 4 and 7), but more than 10 μM JA treatment inhibited the amount of the two peaks. Extract from suspension cell treated with 100 μM SA showed 6 peaks on day 0, 4 peaks on day 3, and 2 peaks (peak 1 and 3) after 6th day of cultivation. Extract from suspension cell treated with 10 μM JA, showed 6 peaks on days 0 and 3, while only 2 peaks (peaks 1 and 3) after 6th day of cultivation. This suggests that suspension cells treated with 100 μM SA and 10 μM JA inhibited the secondary metabolite after 6 days of cultivation while optimal cultivation duration is between 0 to 3 days.
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