ADVENTITIOUS ROOTS INDUCTION FROM *IN VITRO* LEAVES OF *Phaleria macrocarpa* (MAHKOTA DEWA)

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ABSTRACT

ADVENTITIOUS ROOTS INDUCTION FROM *IN VITRO* LEAVES OF *Phaleria macrocarpa* (MAHKOTA DEWA)

Plants, such as *Phaleria macrocarpa*, produce secondary metabolites that are beneficial to humans for its properties such as anti-inflammatory and anti-proliferative. For centuries, *P.macrocarpa* has been used as traditional medicine to cure illnesses. In current commercialisation, the whole plant is grown to obtain the secondary metabolites. However, adventitious roots have shown huge potentialities to accumulate valuable secondary metabolites when they are grown in plant-hormone supplemented medium. The aims of this study were to determine the most optimum plant growth regulator and its concentration to induce adventitious roots from *in vitro* leaves of *Phaleria macrocarpa*. In order to obtain the secondary metabolites, adventitious root cultures have shown rapid growth and ability to produce mass secondary metabolites stably. The results of this study showed no formation of adventitious roots from the *in vitro* regenerated leaves of *Phaleria macrocarpa*. However, there was formation of callus on the explants, which could indicate indirect rhizogenesis. Out of all the treatments applied to the explants, IBA showed the most positive result compared to the other plant growth regulators used. Moreover, the most suitable concentration to induce adventitious roots from the explants was identified to be 7 mg/l of IBA. The duration of observation for the adventitious roots induction was 4 weeks. Therefore, it is recommended to increase the duration for further observation and findings.