MOLECULAR CLONING OF CHALCONE SYNTHASE GENE FROM THE LEAF OF *Strobilanthes* sp.

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ABSTRACT

MOLECULAR CLONING OF CHALCONE SYNTHASE GENE FROM THE LEAF OF *Strobilanthes* sp.

Strobilanthes crispus is one of Malaysian native medicinal plant that has been reported to possess antioxidant, anticancer and anti-diabetic activities and contains a high level of flavonoids. To date, no work has been reported on the molecular and enzymatic level for the biosynthesis of flavonoids in this plant. Thus, a research with the aim to study for the molecular biosynthesis of flavonoids in this plant was conducted and started by the cloning of chalcone synthase (CHS) gene, the key biosynthetic gene of flavonoids in this plant. RACE (Rapid Amplification of cDNA Ends) Polymerase Chain Reaction was conducted to retrieve the 3′ end and 5′ end of chalcone synthase gene in order to obtain the whole sequence of *Strobilanthes crispus* chalcone synthase gene. Although 3′ end was successfully been retrieved and give high similarity to chalcone synthase gene from other plants but unfortunately 5′ end was failed to retrieve.

ABSTRAK

Strobilanthes crispus atau "Pecah Beling" merupakan satu tumbuhan ubat asli di asia yang telah dilapor mengandungi flavonoid yang tinggi dan mempunyai aktiviti-aktiviti antioksidan, antikanser dan anti-diabetes. Sehingga kini, belum mempunyai kajian di peringkat molekular dan enzim yang telah dibuat di tumbuhan ini. Maka, kajian dengan tujuan mengkaji proses biosintesis flavonoid tumbuhan ini telah dimulakan melalui mengklon gen chalcone synthase, satu gen yang bertanggungjawab dengan biosintesis flavonoid di tumbuhan ini. RACE (Rapid Amplification of cDNA Ends) Polymerase Chain Reaction telah digunakan untuk mendapatkan "3' end" dan "5' end" gen chalcone synthase bagi tujuan mendapatkan gen chalcone synthase yang sempurna. Walaupun "3' end" telah berjaya diklon dan memiliki persamaan yang tinggi dengan gen chalcone synthase daripada tumbuhan-tumbuhan yang lain tetapi "5' end" gagal mendapatkan gen chalcone synthase tumbuhan ini.