Improvement of mangosteen Microsatellite Isolation by Selective Hybridization method
(Improvisasi Isolasi Mikrosatelit Manggis dengan Metode Hibridisasi selektif)

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ABSTRACT

Mangosteen is one of the tropical fruits that native plant from Indonesia. Because of uniquely form, good aroma, and more the highly containing of xanthone as anti-oxidant, known as the queen of tropical fruits. Mangosteen is polyploid plant as allotetraploid derivative from G. malaccensis and G. hombroniana. The molecular approach to study genetic variability, phylogenetic, and population genetics are popular contrast in either morphology or physiology approach, especially microsatellite (SSR; simple sequence repeats) that have hypervariability, reproducibility, codominant inheritance, abundance in genome. To develop microsatellite markers in mangosteen, we conducted selective hybridization method. Firstly, DNA is extracted from dried leaf by modified CTAB method and then digested by RsaI. DNA fragments ligated with adaptor linker RsaI and hybridized on nylon membrane with SSR oligonucleotides in DIG easy hyb solution. The fragments washed on SSC and SDS buffer and enriched by amplification. They were ligated into pGEM®-T easy vector and transformed into E. coli. The colony screened by blue-white selection. The selected colonies were amplified by SP6 primer and SSR oligonuleotides. Plasmid extracted from the selected-colony and then purified by PEG precipitation. The DNA fragment was sequenced by ABI3130xl genetic analyzer following BigDye® Terminator v3.1 Cycle Sequencing Kit protocol. We collected 42 % colony that containing SSR fragment. Microsatellite motif identified as dinucleotides type, 67% and microsatellite repeat type more than 10 repeat, 67%.