Evaluation of SCAR18 Marker Linked to β-Carotene for Early Screening of Mango (*Mangifera indica* L.) Progenies

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ABSTRACT

SCAR18 primer that developed to identify the Beta gene in tomato, produced different amplimer when it used for mango. Mango cultivars consist of 'Arumanis 143', 'Carabao', 'Haden', 'Podang' and 'Suvarnarekha' that has green, reddish orange, yellowish orange and orange skin fruit respectively and their hybrids were used as plant material. The evaluation was conducted at Brawijaya University Malang and Eijkman Laboratory Jakarta. The result showed that those than mango cultivars having green skin like 'Arumanis 143' and unriped yellow cultivar 'Carabao' . SCAR18 marker as a sign on the presence of beta (B) locus in tomato was mango cultivars having orange or yellowish skin for 'Haden' and 'Podang' contained β carotene higher not related with the differences of beta carotene accumulation in mango cultivars. SCAR18 marker that was amplified in mango produced specific amplimer 320 bp in length. The similarity of $SCAR18_{320}$ sequence obtaining by sequences alignment among five parental cultivars and 12 hybrids was up to 100%. $SCAR18_{320}$ markers as DNA marker may not be used to characterized the differences of five parental cultivar skin color containing different β-carotene. $SCAR18_{320}$ markers as DNA marker may not be used to identify gene that cause the differences of skin color of manggo hybrids. $SCAR18_{320}$ sequences that were generated by SCAR18 markers as predicted beta (B) loci had no significant similarity with sequences database relating to beta (B) gene in NCBI. $SCAR18_{320}$ match to 19 Ty3-gypsy retrotransposons and others sequences related transcriptional regulator in more dissimilar sequences (discontiguous megablast) category.