

OPH15, OPK14, OPX13 และ OPW09 สามารถแยกความแตกต่างได้ระหว่างต้น MIG1-MIG5 เทียบกับต้นปกติโดยเฉพาะ OPK14 ที่ให้แถบดีเอ็นเอน้ำหนักโมเลกุลประมาณ 600 คู่เบสซึ่งแตกต่างจากกลุ่มควบคุม เมื่อทำการหาลำดับเบสพบว่ากรดอะมิโนของยีนมีความเหมือนยีนในสมาชิก cytochrome P450 ของ *Oryza sativa* var. *japonica* ถึง 92 % สำหรับรุ่น M2 และ M3 ยังคงพบความแปรปรวนทางพันธุกรรมโดยการใช้ 3 ไพรมเมอร์ได้แก่ OPH15, OPX13 และ OPW09



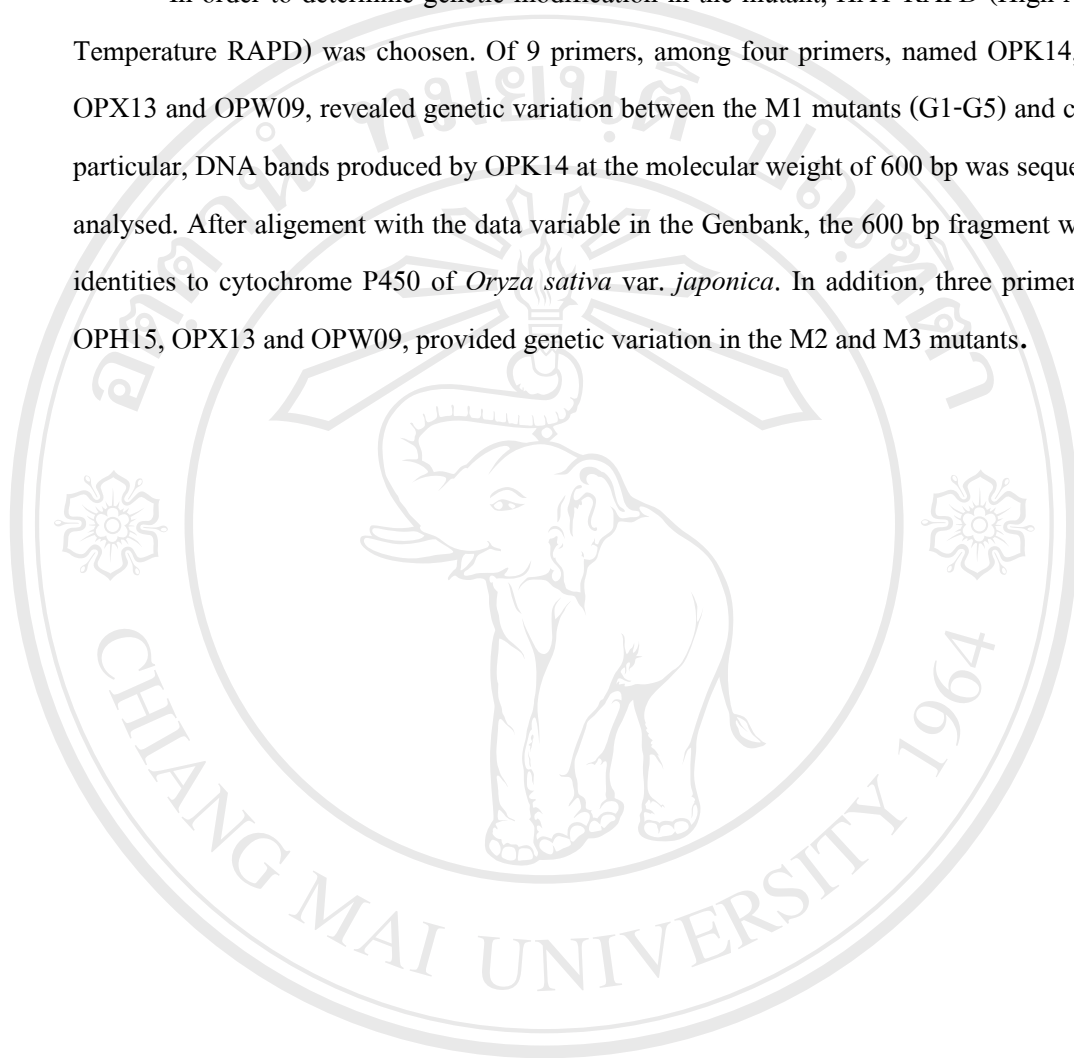
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Thesis Title	Mutational Induction in Purple Glutinous Rice (<i>Oryza sativa</i> var. <i>indica</i>) by Low Energy Ion Beam Application		
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Abstract

Application of low energy ion beam bombardment for induction mutation in purple glutinous rice were studied. About 4800 seeds were bombarded by low energy nitrogen ion beam at energies in ranges of 60, 80, 100 and 125 keV. Each energies used fluences 1, 4, 8 x 10¹⁶ ions / cm² respectively. After bombardment the seeds were germinated on wet culture paper for 7 days. Then, rice seedlings were transferred to grow in soil until ripening stage. The result revealed that percentage of germination and survival were decreased when fluences and energies increased significantly. At M1 generation, nine rice seedlings with green leaf and stem sheath (G1-G9) were observed at 60, 80 and 100 keV, as well as one mutant with non glutinous seeds at 80 keV. However one of these seedling was death. Therefore seeds of the remainder cultivated for further analysis. Valiable characteristics of M2 and M3 generation was following; 1) leaf blade were green , variegated and purple color., 2) Leaf sheath were green , variegated and purple color., 3) Seed coats were straw, light purple and purple color., 4) Pericarp color were white, light purple and purple color. 5) Finally, the ratio between non glutinous seeds and glutinous seeds was 3:1.

In order to determine genetic modification in the mutant, HAT-RAPD (High Annealing Temperature RAPD) was chosen. Of 9 primers, among four primers, named OPK14, OPH15, OPX13 and OPW09, revealed genetic variation between the M1 mutants (G1-G5) and control. In particular, DNA bands produced by OPK14 at the molecular weight of 600 bp was sequenced and analysed. After alignment with the data variable in the Genbank, the 600 bp fragment were 92 % identities to cytochrome P450 of *Oryza sativa* var. *japonica*. In addition, three primers, named OPH15, OPX13 and OPW09, provided genetic variation in the M2 and M3 mutants.



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