Transformasi gen Osdep1-Tc (Oryza sativa dense and erect panicle1-Truncated) ke Kalus Padi cv. Taipei 309 menggunakan Agrobacterium tumefaciens

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Abstrak

Telah dilakukan penelitian yang bertujuan untuk melakukan transformasi gen Osdep1-Tc ke kalus padi cv. Taipei 309 menggunakan Agrobacterium tumefaciens. Transformasi gen Osdep1-Tc dilakukan menggunakan A. tumefaciens strain LBA4404 yang membawa plasmid rekombinan pCAMBIA1301-Osdep1-Tc, mengandung gen reporter (gus), gen nptII dan hptI. Gen Osdep1-Tc yang telah dikloning ke vektor pengklonaan pGEM-T Easy pada penelitian sebelumnya digunakan sebagai sampel untuk kemudian isubkloning ke pCAMBIA 1301 dan ditransformasikan ke dalam Escherichia coli DH5 sehingga dihasilkan vektor rekombinan pCAMBIA-Osdep1-Tc. Vektor rekombinan kemudian dielektroporasi ke A. tumefaciens dan ditransformasi ke kalus embriogenik padi. Aktivitas GUS pada kalus berhasil dideteksi 3 hari setelah infeksi dengan A. tumefaciens. Analisis PCR kalus transforman menunjukkan bahwa gen hptI berhasil terintegrasi dengan stabil pada kelima kalus uji.

.....Research about transformation of Osdep1-Tc gene into rice calli cv. Taipei 309 using Agrobacterium tumefaciens had been done. Transformation of Osdep1-Tc was carried out using A. tumefaciens strain LBA4404, harbored recombinant plasmid pCAMBIA1301-Osdep1-Tc, which contained a reporter gene (gus), hptI and nptII gene. Osdep1-Tc gene had been cloned previously into the pGEM-T Easy cloning vector. The gene was being subcloned into pCAMBIA 1301 and transformed into Escherichia coli DH5 in order to obtain recombinant vectors pCAMBIA-Osdep1-Tc. Furthermore, the recombinant vectors was electroporated into A. tumefaciens and transformed into rice embryogenic calli. GUS activity in rice calli was detected 3 days after infection with A. tumefaciens. PCR analysis of the transformant calli revealed that all five calli tested showed a succeeded stable integration of hptI gene.