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Development of Korean Transgenic Soybean Cultivar Kwangan with *bar* Resistance

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To improve the *Agrobacterium*-mediated transformation efficiency from Korean Cultivar, we screen available domestic soybean cultivars and selected Kwangan as a soybean transformation material. Here, we introduced *bar* gene into Kwangan and tested different experimental conditions for better efficiency. We introduced pCAMBIA3300-Epsps, pCAMBIA3301 and pZY102 to produce *bar* resistant soybean Kwangan. They have *bar* gene for resistance against herbicide phosphinothricin(PPT). GUS (β -glucuronidase) gene was included in most of vectors and used to check transformation frequency. Among those genes, explants introduced with pCAMBIA3300-Epsps, pCAMBIA3301 and pZY102 were obtained and regenerate into several plants and transfer to pot for seed set. PCR and Southern blot are carrying with those putative transformants.

Key words: Kwangan, *bar*, *Agrobacterium*-mediated transformation

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Protective Effect of Administrated Glutathione-enriched *Saccharomyces cerevisiae* FF-8 against Hepatotoxicity and Oxidative Stress in Alcohol-induced Fatty Liver Rats

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The present study is aimed to evaluate the protective effect of glutathione-enriched *Saccharomyces cerevisiae* FF-8 on hepatotoxicity and oxidative stress in alcohol-induced fatty liver rat. Those activities of liver marker (ADH, ALDH, alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, lactate dehydrogenase), lipid peroxidative index (thiobarbituric acid-reactive substances), and antioxidant status(reduced glutathione), were used to monitor those protective roles of *S. cerevisiae* FF-8. When the rat was treated alcohol, those liver marker enzymes in plasma(except ADH, ALDH) and the lipid peroxidation index in the liver were increased but these were significantly decreased by *S. cerevisiae* FF-8 treatment. But alcohol dehydrogenase(ADH), acetaldehyde dehydrogenase(ALDH) enzyme were increased by *S. cerevisiae* FF-8 treatment. The concentration of hepatic glutathione is known to be closely associated with antioxidant system and this was significantly depelet in the alcohol-induced rat, but this was significantly recovered by treating with *S. cerevisiae* FF-8. Administration of *S. cerevisiae* FF-8 in normal rat did not show any signs of harmful effects. Therefore, the current findings suggests that *S. cerevisiae* FF-8 could be an effective antioxidant with no or negligible side-effects and it might be useful for the purpose of protection treatment of hepatotoxicity and oxidative stress in alcohol-induced fatty rat.

Key word: *S. cerevisiae* FF-8, glutathione, ADH, ALDH, fatty liver rat