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Bacteriocidal Yeast that Producing OR-7

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In order to establish yeast cells that produce a bacteriocin OR-7, the 180 bp OR-7 gene with start and stop codons was synthesized and cloned into pAUR123, a yeast expression vector. Transformed yeast cells showed antibacterial activity against *Bacillus subtilis* and *Escherichia coli*. This result indicates that yeast cells that producing OR-7 possess bacteriocidal property against both Gram positive and negative bacteria. On the other hand, no antibacterial activity was detected by using yeast cells that harboring pAUR123. In this study, we successfully established bacteriocin producing yeast cells that could be used as food preservative or antibiotics. [This work was supported by the Ministry of Commerce, Industry and Energy, Grant number 7000885. Ok Hee Lee and Min-Kyung Jang were supported by Brain Busan 21 Project.]

Key words: Bacteriocin, OR-7, *Saccharomyces cerevisiae*, yeast

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Proanthocyanidin Contents in Pine Needle Extracts and Antioxidant Activities

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Flavonoids in pine needles are known to be effective scavengers of free radicals. Especially, proanthocyanidin, a kind of flavonoids possesses cardiovascular protection and antioxidant activities. Here, we evaluated proanthocyanidin contents out of total polyphenolic compounds in pine needle extracts prepared by using hot water, ethanol, hexane or CO₂. Analyses of total polyphenolic compounds and proanthocyanidin in each extracts indicated that hot water extract exhibited the largest amounts of them, but CO₂ extract exhibited the smallest amounts. On the other hand, evaluation of proanthocyanidin contents in total polyphenolic compounds in each extracts indicated that CO₂ extract showed the highest content, but hot water extract showed the lowest content. These results suggests that extracts containing large amounts of both total polyphenolic compounds and proanthocyanidin could be obtained by using hot water or ethanol extractions. Furthermore, extract containing high content of proanthocyanidin out of total polyphenolic compounds could be achieved by using CO₂ extraction. Measurement of antioxidant activity of each extracts showed that hot water extract possessed the highest activity and ethanol extract possessed relatively high activity. In this study, we evaluated the antioxidant compounds in pine needle extracts prepared by four different extraction methods that could be used for effective components of functional food products. [This work was supported by the Ministry of Commerce, Industry and Energy, Grant number 7000885. Ok Hee Lee and Min-Kyung Jang were supported by Brain Busan 21 Project.]

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