World Academy of Science, Engineering and Technology
International Journal of Biotechnology and Bioengineering
Vol:9, No:12, 2015

Development of Functional Dandelion (Tarazacum officinale) Beverage Using Lactobacillus acidophilus F46 with Cinnamoyl Esterase Activity

Authors : Yong Geun Yun, Jong Hui kim, Sang Ho Baik

Abstract : This study was carried out to develop a fermented dandelion (Tarazacum officinale) beverage using lactic acid bacteria with cinnamoyl esterase (CE) activity isolated from human feces. Lactic acid bacteria were screened based on bacterial survival ability in dandelion extract and CE activity. Dandelion extract fermented by Lactobacillus acidophilus F-46 (LA-F46) maintained approximately 105-106 log CFU/mL over an 8 days period. After fermented dandelion beverage (FDB) with LA-46 for 8 days at 37oC the pH was decreased from pH 7.0 to 3.5. Antioxidant activity by using DPPH radical scavenging activity of the prepared FDB was significantly increased compared to that of non-fermented dandelion beverage (NFDB). Moreover, CE activity was significantly enhanced during fermentation and showed the approximately 4.3 times increased concentration of caffeic acid up to 9.91 mg/100 mL after 8 days of incubation compared to NFDB. Therefore, it concluded that dandelion can be a good source for preparing a functional beverage and fermentation by LA-F46 enhanced the food functionality with enhanced caffeic acids.

Keywords : cinnamoyl esterase, dandelion, fermented beverage, lactic acid bacteria
Conference Title : ICBSE 2015 : International Conference on Bioprocess Systems Engineering
Conference Location : Melbourne, Australia
Conference Dates : December 13-14, 2015