

Microwave-assisted Extraction of Ginsenosides in Red-Ginseng

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Ginseng is well known for its health benefitting ginsenosides such as Rg1, Rb1 and Rg3 which are registered components of ginsenosides in the MFDS(Ministry of Food and Drug Safety) regulation. Red-ginseng is different from White-ginseng that it has Rg3 ginsenoside when properly prepared. Rg3 has been shown to be more effective in anti-cancer function than other ginsenosides so that it has been drawing more attention recently among different ginseng products. Microwave heats dielectric materials, especially water, inside and outside very rapidly and causing cell wall rupture leading to faster mass transfer of inner cell materials with some thermal effects. In this study, Red ginseng was subjected to periodic microwave radiation followed by usual extraction. The periodic microwave irradiation of proper electromagnetic environment has been shown to substantially improve the posterior extraction process by increasing the extraction rate and the total contents of the representative ginsenosides including Rg3.