
The conversion of ginsenoside in ginseng extract by Plasma Treated Water (PTW)

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The ginseng was known of the many pharmacological effects such as tumor-suppression, anti-inflammation, immune-stimulation, and antiaging etc. Usually ginseng was consumed through the process of heating like red ginseng. After heating of ginseng, the major ginsenosides in fresh and white ginseng produce less polar ginsenosides (Rg3, Rk1, Rg5 etc.) by acid hydrolysis reaction which Rg3, Rk1, and Rg5 have good pharmacological effects. Thus, it has been attempted that the researchers investigated the increase of Rg3, Rk1, Rg5 through hydrolysis by heat and acid treatment.

In this study, the plasma treatment was adjusted with pH 2.1 to 3.5 of PTW during the time course. The amount of Rg3 and Rg5 in the ginseng extract was proportional to the amount of PTW per gram of ginseng extract and the amount of Rg3 (2.21mg/g) and Rg5 (4.02mg/g) was the highest in the sample containing PTW 40 ml/g. The quantity of Rg3 and Rg5 increased 9.3 times and 7.9 times respectively by comparison of red ginseng powder with heat treatment alone.

The PTW used in the experiment is expected to be able to broaden the range of further utilization of augmentation of specific ginsenosides because it can increase the acidity in the water simply by blowing the plasma gas without using other special gas, acid, and chemicals.

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