Food Funct. 2015 Oct;6(10):3393-8. doi: 10.1039/c5fo00265f.

A study on quality components and sleep-promoting effects of GABA black tea.

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Abstract

The aims of this study were to analyze the changes in quality components of gamma (γ)-aminobutyric acid (GABA) black tea during processing, and to investigate the effect of three dosages of GABA black tea on sleep improvement. The results showed that the GABA content was increased significantly up to 2.70 mg g(-1) after vacuum anaerobic and aerobic treatment. In addition, the content of GABA after drying reached 2.34 mg g(-1), which achieved the standard of GABA tea. During the entire processing of GABA black tea, the contents of tea polyphenols, caffeine and total catechins displayed a gradually descending trend, while the contents of free amino acids and GABA were firstly increased, and then reduced. The GABA black tea had significant effects on prolonging the sleeping time with sodium pentobarbital ($P < 0.05$) and significantly enhancing the sleeping rate induced by sodium pentobarbital at a sub-threshold dose ($P < 0.05$). But its effect on shortening the sleeping latency period induced by sodium barbital was not significant ($P > 0.05$). It had no effect on directly inducing sleep and the mouse body weight. The extract of GABA black tea improved the sleeping quality of mice to extend with an optimal effect being found in the high dose-treated mice.

PMID: 26290415 DOI: 10.1039/c5fo00265f