

## The extraction behavior of Caffeine and EGCG(Epigallocatechin gallate) from Korean Green tea by Supercritical Carbon Dioxide

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Green tea contains caffeine and catechin polyphenol (48–55wt% EGCG of total catechin). Caffeine typically can cause anxiety, dizziness, headache and interfering sleep at higher doses. Catechin, however, has antioxidant effects, cancer chemo-prevention, improving cardiovascular health and decreasing weight. So it is recommended to reduce caffeine contents from green tea without loss of catechin. In order to obtain the decaffeinated green tea, we used supercritical carbon dioxide as a solvent to extract caffeine. We carried out extraction experiments in a 230 mL extractor at 40–80°C, 200–400 bar and with 4.4–14.4% initial water loading into feed. Optimal condition was at 40°C, 400bar with 14.4% initial water loading within the experimental range. We concluded that caffeine was more soluble than EGCG in the supercritical carbon dioxide and water.