

ABSTRACT

Epigallocatechin gallate (EGCG) is the most abundant green tea catechin with a powerful antioxidant effect to prevent cancer cells. EGCG in steeping tea is highly susceptible to degradation. This paper was focused on enhancing the stability of EGCG and antioxidant activity (IC₅₀) by vitamin C addition in the range of 1 mg to 3 mg concentration with 10 g/L of steeping green tea. Evaluation of EGCG and antioxidant activity (IC₅₀) were conducted at 0 days, 1 day, 2 days, 3 days, and 4 days of storage time. EGCG was analyzed using thin layer chromatography densitometry methods. It was validated for the determination of EGCG in steeping green tea. The highest of EGCG was 3,027 % w/w that occur in steeping green tea with vitamin C 2 mg addition. Percent of EGCG loss in TH, THVC1, THVC2, THVC3, THVC4 and THVC5 during 4 days storage were 19.93%, 10.89%, 21.08%, 18.18%, 28.56% dan 9.76%, respectively. The percent of EGCG in all sample difference is not significant at the 0.05 level. Antioxidant activity was analyzed using DPPH (2,2-diphenyl-1-picrylhydrazyl) methods. Percent of IC₅₀ increasing TH, THVC1, THVC2, THVC3, THVC4 and THVC during 4 days storage were 227%, 125.50%, 111.73%, 79%, 67.29%, and 66.52% respectively. The IC₅₀ in all sample difference is significant at the 0.05 level. These results were concluded that vitamin C addition does not give effect to EGCG stability but it can reduce IC₅₀ increase in green tea.

Keyword: EGCG, Vitamin C, Green tea, IC₅₀.