Dear Editor:

A recent article by Leung et al. (1) reported that drinking black tea has benefits equal to those of drinking green tea in terms of their antioxidant capacities because theaflavins present in black tea possess at least the same antioxidant potency as catechins present in green tea. As reported in related studies (2–4), it is clear that a group of theaflavins (TF) in black tea, specifically theaflavin-3,3’-digallate (TF3), has strong antioxidant activity similar to (-)-epigallocatechin gallate (EGCG), a major antioxidant in green tea. However, the concentration of diverse antioxidants in the different teas should be first considered before drawing any conclusions about overall health benefits of teas.

We measured the total phenol content and antioxidant capacity of commercial tea products widely available in Europe and the United States. Each bag of green and black tea was extracted with 200 mL distilled deionized water at 100°C for 2 min. The total phenol content was determined by the Folin-Ciocalteau method and total antioxidant capacity was measured in terms of free radical–scavenging activity (5). Black and green teas contained total phenols equal to 124 and 165 mg gallic acid, respectively. We also found that the antioxidant capacity per serving of green tea (436 mg vitamin C equivalents) was much higher than that of black tea (239 mg).

Therefore, we conclude that green tea has more health benefits than an equal volume of black tea in terms of antioxidant capacity. This can be explained by the fact that each tea is different in terms of composition and concentration of antioxidant compounds. As reported previously (6–8), TF are low (2–6% of extracted solids) and thearubigens (20%) are high in black tea, whereas in green tea, catechins are much higher (30–42%), particularly EGCG, which is the most abundant catechin. In addition, as discussed in our report (9) and another review (7), we must consider the combined effects of the complex bioactive compounds when considering the overall health benefits of a food. In conclusion, the total antioxidant capacity of tea is not related to a particular kind of polyphenol but to the combined activity of diverse antioxidants, including phenolic acids and polyphenols.

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