Antioxidant Activity of Aqueous Extracts of Herbal Teas

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ABSTRACT

The objective of this study was to investigate antioxidant properties of aqueous extracts of commercial herbal teas- lavender (Lavandula officinalis)、lemon verbena (Lippia citriodora)、lemongrass(Cymbopogon sp)、rosemary(Rosmarinus officinalis)、leaves of linden(Tilia sp)、mint(Mentha piperita)、sweet violet(Viola ordorata)、lemon balm(Melissa officinalis)、cornflower(Centauea cyanus)、marigold(Calendula officinali)、camomile(Matricaria chamomilla) and sage(Salvia officinalis). The antioxidant properties were evaluated by DPPH free radical scavenging, metal chelating and reductive potential activities. In addition, total phenolic compounds were determined. Those aquenous antioxidant activities were also compared to 0.02% BHT. At the concentration of 40 mg/mL, aqueous extract of lemon verbena exhibited 90.03% in DPPH radical scavenging activity compared to treatment with 0.02% BHT. Regardless of the extractive temperature, lemon verbena、rosemary、lemon verbena and sage, the scavenging activity could reach to 60%. The chelating activity of 50 °C and 70 °C aqueous extracts were not as good as that of 0.02% BHT. Aqueous extracts of lavender showed the most stable chelating Fe2+ activity which could reach 60% regardless of conceatration and extractive temperature. For lemon verbna and sage, metal chelating activity of aqueous extracts were higher than those of 50 °Caqueous extracts. Furthermore, metal chelating activities of 70 °C aqueous extracts of leaves of linden、marigold、cornflower and sweet violet were lower than those of 50 °C extracts. Reductive potential of 70 °C aqueous extracts at conceatration of 20 mg/mL, Rosemary、leaves of linden、mint and marigold were significantly difference (P0.05). In addition to 50 °C aqueous extracts of leaves of linden、sage、marigold、sweet violet and lavender, other six aqueous extracts of herbal teas showed no significant difference (P>0.05).

Keywords : antioxidant activity、ferrous iron chelating activity、reductivepotential、total phenolic compounds、herbal tea

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