

Abstract

Antioxidant Capacity of Some Extracts from Aronia and Lonicera Fruits [†]

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Studies in the literature have shown high levels of phenolic compounds in the fruits of *Aronia melanocarpa* (fam. *Rosaceae*, black chokeberry) and *Lonicera caerulea* L. (fam. *Caprifoliaceae*, Siberian blueberry). Aronia fruits contain high levels of flavonoids and have significant antioxidant activity [1]. It has been observed that Lonicera fruits have many beneficial effects: anti-aging, anti-inflammatory, antimicrobial, anticancer, cardio- and neuroprotective activity, etc. [2]. In addition, it is known that all of these pathologies are strongly associated with free radical formation and lipid peroxidation, also involved in many other diseases [1]. This study assessed the antioxidant capacity of ethanolic extracts from chokeberries and blueberries obtained by Soxhlet extraction, maceration, ultrasounds, and microwave-assisted extraction methods. First, the phenol compounds from extracts were analyzed by HPLC [3]. Then, the antioxidant capacity was determined by the DPPH• method, and the total phenol (TP) content was investigated using the Folin–Ciocalteu reagent (spectrophotometric methods) [4]. The range of quantified extraction yields varied from 10.8 to 15.2 g semi-solid extract/100 g fruit. P-coumaric acid, caffeic acid, chlorogenic acid, rutin, and epicatechin were identified in the chromatographic method in all extracts. The scavenging capacity of DPPH• was expressed as µg antioxidant/mL equivalents and varied between 2.07 ± 0.066 and 4.01 ± 0.069 for gallic acid, 4.25 ± 0.13 and 8.15 ± 0.14 for caffeic acid, 23.4 ± 0.63 and 41.6 ± 0.65 for quercetin, 22 ± 0.52 and 37.0 ± 0.54 rutin, and 37.2 ± 1.1 and 68.3 ± 1.1 for morin. Ultrasound-assisted extraction was the most efficient method of extraction. The berry extracts also had a high antioxidant capacity, expressed in terms of flavonoid equivalents. The ultrasound extraction was the most efficient method of extraction. The present study concludes that Aronia and Lonicera fruits show high antioxidant content, as proven by chromatographic and spectrophotometric methods.

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