Antiradical activity of extracts of almond and its by-products.

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Abstract:
Antioxidant activities of ethanolic extracts of whole almond seed, brown skin, and green shell cover were evaluated using different free radical trapping assays. Trolox equivalent antioxidant capacity assay revealed that the total antioxidant capacities of brown skin and green shell cover extracts were 13 and 10 times greater than that of the whole seed extract at the same extract concentration. The free radical-scavenging activity of extracts of brown skin and green shell cover also exceeded that of the whole seed. The scavenging activity of superoxide radical by different almond extracts ranged from 76 to 97% at 100 ppm and 85 to 99% at 200 ppm. The corresponding reduction of hydrogen peroxide concentration was 59–66% (100 ppm) and 86–91% (200 ppm). The hydroxyl radical-scavenging capacities at 100 and 200 ppm were 16 and 42% for whole seed, 57 and 100% for brown skin, and 40 and 56% for green shell extracts, respectively. A 100% scavenging activity of the 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical was observed for brown skin and green shell extracts at 100 and 200 ppm concentrations, respectively, and whole seed extracts scavenged 21 (at 100 ppm) and 73% (at 200 ppm) of the DPPH radical.