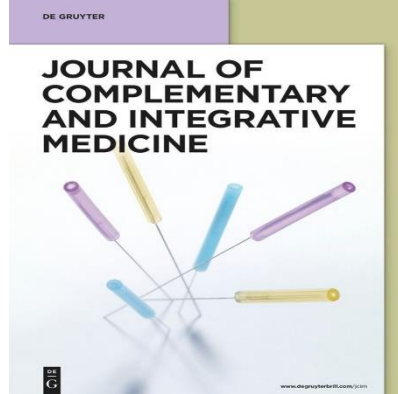




*Antioxidant activity, carotenoids, chlorophylls and mineral composition from leaves of *Pallenis spinosa* an Algerian medicinal plant*

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Abstract

Background Plant and medicinal herbs are important sources of bioactive compounds and minerals that can play a role in preventing various diseases and they are considered a factor indispensable for the proper functioning of the human body. **Methods** We investigated the content of carotenoids and chlorophylls of leaves from *Pallenis spinosa* (*P. spinosa*), as well as their antioxidant activity and mineral composition then, we optimized the solvent extraction for the recovery of total carotenoids and chlorophylls using spectrophotometric method. Finally, we tested the antioxidant activity of the optimized extract by three assays (DPPH, ABTS and FRAP) and we determined the mineral composition by Emission Spectrometer Induced Couple Plasma (ICP). **Results** Carotenoid (CART), chlorophylls (CHLa + b), chlorophyll a (CHLA), chlorophyll b (CHLB) contents were about 36.337 ± 0.312 ; 347.769 ± 6.326 ; 224.286 ± 5.601 ; 123.483 ± 1.339 mg/100 g dw, respectively. We revealed an interesting antioxidant capacity by the tested extract (DPPH: 127.522 ± 1.406 mmol ET/Kgdw, ABTS: 104.827 ± 1.222 mmol ET/Kgdw and FRAP $71.89 \pm 0.495 \pm 0.994$ mmol ET/Kgdw). Carotenoids and chlorophylls content correlate positively with the antioxidant activity of *P. spinosa* leaves extract ($r=0.646-0.986$). Eight minerals have been detected (Mg, Ca, P, Fe, Mn, Zn, Cu and Cr), Mg and Ca being the predominant ones (6479.32 ± 48.33 and 3851.88 ± 130.63 mg/Kg, respectively). **Conclusions** These results have shown that *P. spinosa* leaves are a good source of carotenoids and chlorophylls with a potent antioxidant potential with high amount of minerals.

Keywords

Pallenis spinosa; antioxidant activity; carotenoids; chlorophylls; extraction; mineral composition.