HP-10: Ferric Reducing power and DPPH free-radical scavenging activity of the greenly synthesized manganese oxide nanoparticles by using *Ocimum basilicum* L. leaves

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ABSTRACT

Plant-based NP green synthesis is now regarded as a gold standard among these green biological techniques owing to its ease of use and the diversity of plants. However, (MnO NPs) have gained importance in the synthesis and manufacturing processes because of their lower toxicity. The aim of this study was to quantify the phytochemical *Ocimum basilicum* L. compounds and to greenly synthesize of manganese oxide nanoparticles (MnO NPs) using basil leaves aqueous extract and their *in vitro* antioxidant power assessment. Bioactive molecules extraction and qualitative analysis of some phytochemical compounds were released by using standard protocols. Moreover, green synthesis of manganese oxide nanoparticles was carried up. *In vitro* anti-oxidant power was studied by DPPH freeradical scavenging activity and ferric reducing antioxidant power FRAP. Results of phytochemical essays showed that aqueous extract of *Ocimum basilicum* L. is very rich on different chemical compounds such as saponins phenols, flavonoids, catechic tannins, saponins, reducing sugars, alkaloids and terpenes. The UV-Vis absorption of NPs presenting the maximum absorption peak at the wavelength of 405 nm that confirm the MnO NPs' green synthesis. IC_{50} values in the DPPH and FRAP assays indicate that this plant has a high anti-oxidant activity. In conclusion, this study confirmed that aqueous extract of *Ocimum basilicum* L. is rich of important bioactives compounds that have potential properties as biocatalyst for the biosynthesis of manganese oxide nanoparticles (MnO NPs). In addition, MnO NPs was able to induce highly effective anti-oxidant power which qualify to protect against oxidative stress.

Key word: *Ocimum basilicum L.; MnO NPs; anti-oxidant power; DPPH; FRAP.*