Supplementary Material

MgONPs Can Boost Plant Growth: Evidence from Increased Seedling Growth, Morpho-Physiological Activities, and Mg Uptake in Tobacco (*Nicotiana tabacum* L.)

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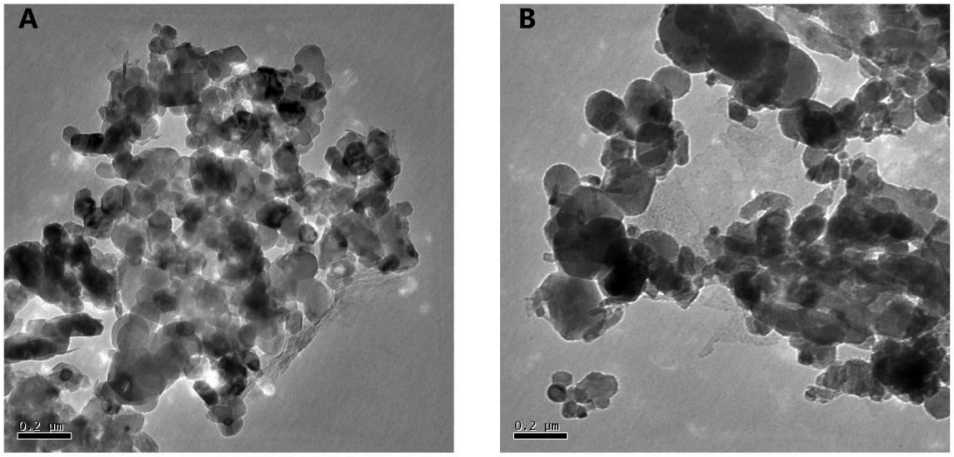

Figure S1. TEM Morphological and dispersibility characterization of MgONPs. (A) MgONPs dispersed in the deionized water and (B) in the matric extractiong solution at pH 7.0.

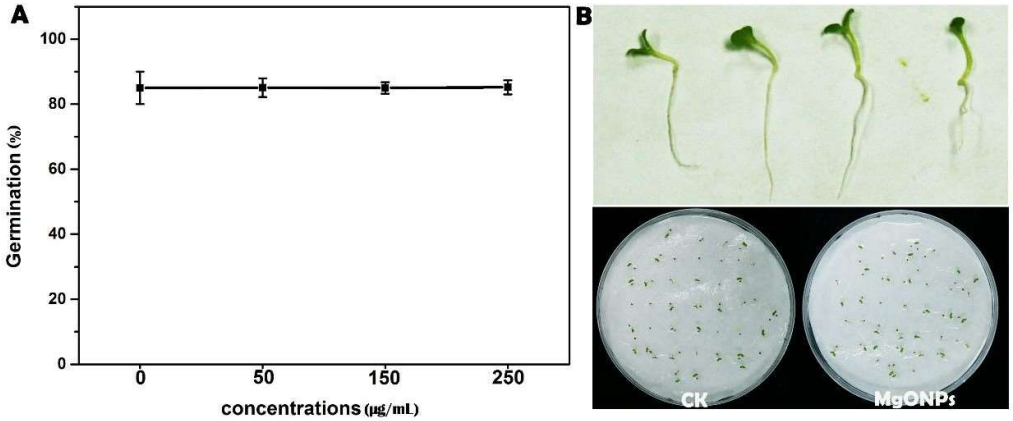

Figure S2. Germination of tobacco seeds after treatment with different concentrations (0, 50, 150, and 250 μg/mL) of MgONPs for 5 days. (A) Germination rate, (B) root length and stem length of the seedlings and (C) phenotypes of 5-day-old tobacco seedlings grown on media with water. Error bars represent the standard deviation, * and ** indicate $p < 0.05$ and $p < 0.01$, respectively.

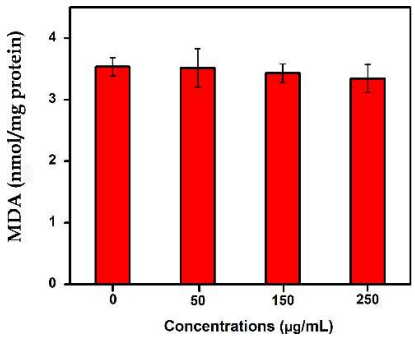

Figure S3. Effect of the different concentrations of MgONPs on the malondialdehyde (MDA) content of tobacco plants. Error bars represent the standard deviation, * and ** indicate $p < 0.05$ and $p < 0.01$, respectively.

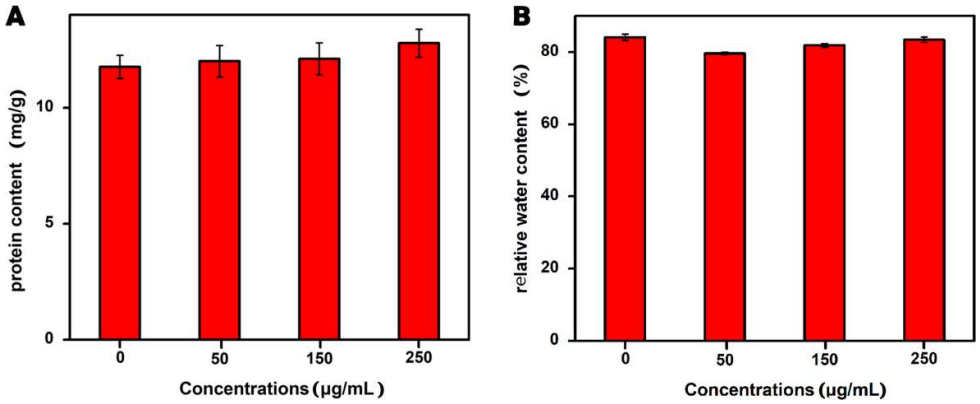

Figure S4. Effect of MgONPs on the protein and relative water content of tobacco plants. The trend shows none significant effect between each treatments.

Table S1 Zeta potential analyses

liquid	Zeta potential (mV)
MgONPs in the matrix extraction	-20.5±2.6
matrix extraction	-24.7±3.4