

**Figure S1:** SEM of the ZnO BPs treated apple calli cells

**Table S1:** The primers utilized in the qRT-PCR analysis

**Table S2:** Alignment of the reference genome statistical tables

**Table S3:** All genes of CK and ZnO NPs treated groups and unique genes of each group

**Table S4:** Differentially expressed genes after ZnO NPs treatment

**Table S5:** TFs differentially expressed after ZnO NPs treatment

**Table S6:** Mass spectrometry analysis of the bound proteins