Electronic Supplementary Material (ESI) for Environmental Science: Nano.

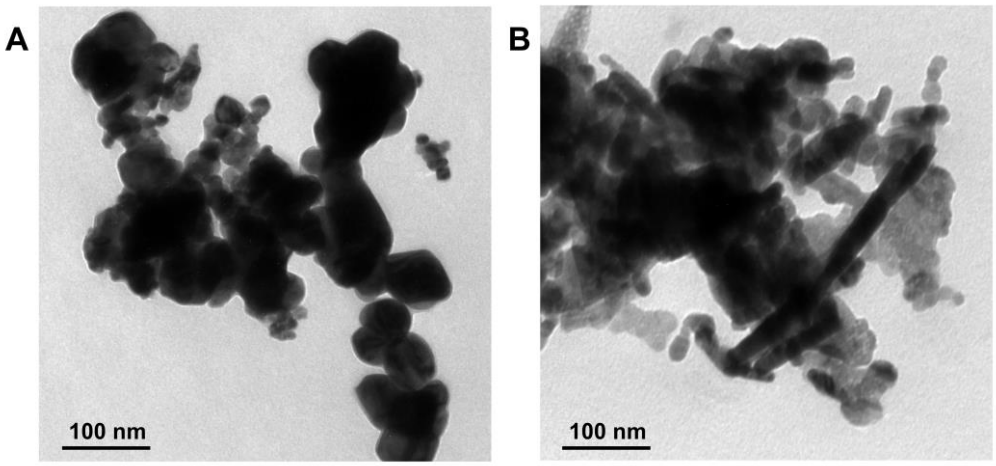

FIGURE S1 Characterization of the CuO NPs and ZnO NPs. TEM images of the CuO NPs (A) and ZnO NPs (B). Scale bars, 100 nm.

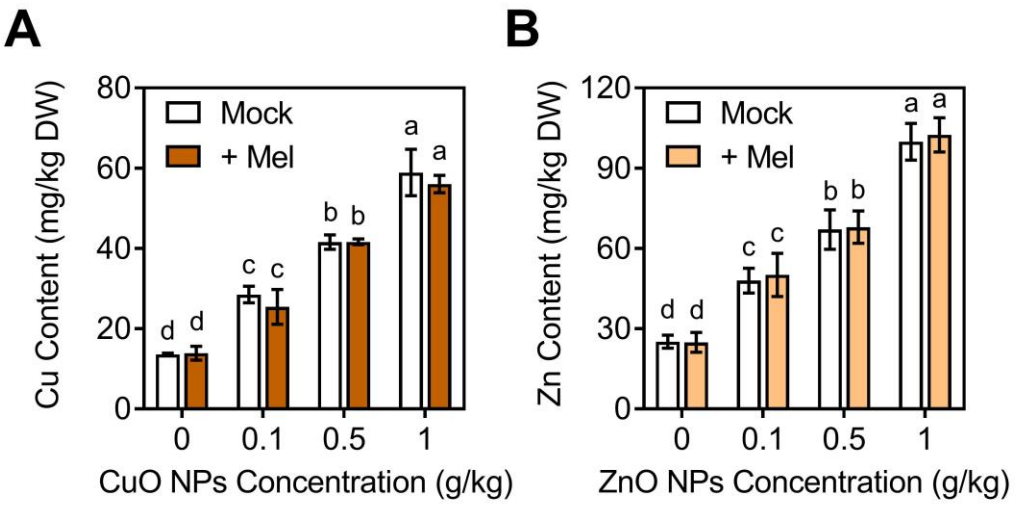

FIGURE S2 Cu and Zn accumulation in rice leaves. Rice leaves were grown in different treatments of CuO NPs (A) or ZnO NPs (B) after 35 days. All analyses were performed with three replicates. The different letters show a significant difference at a probability of $P < 0.05$. DW, dry weight.

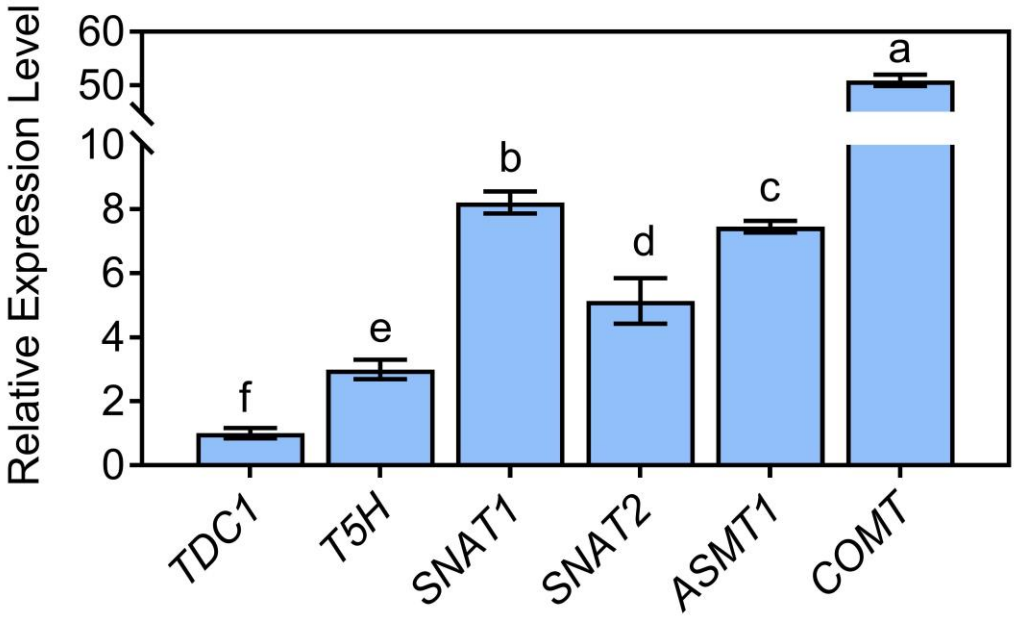

FIGURE S3 Expression profiles of melatonin biosynthetic genes in rice leaves. The expression levels were first normalized to the rice internal control gene *UBQ5* and reported relative to *TDC1* expression level of control (assigned a value of 1). All analyses were performed with three replicates. The different letters show a significant difference at a probability of $P < 0.05$.

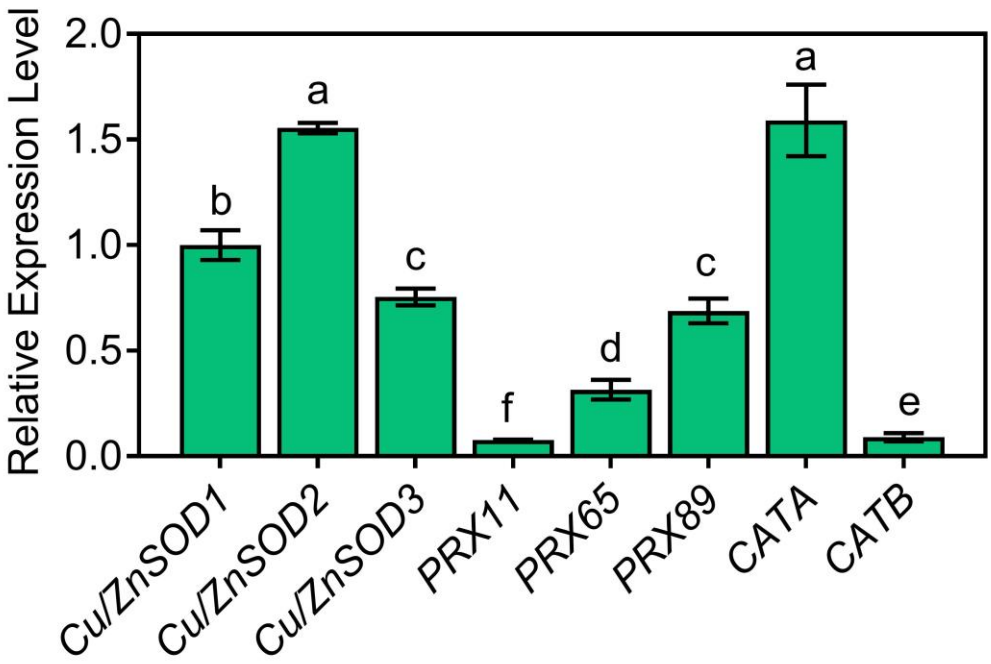

FIGURE S4 Expression profiles of the gene of antioxidant enzyme in rice leaves. The expression levels were first normalized to the rice internal control gene *UBQ5* and reported relative to *Cu/ZnSOD1* expression level of control (assigned a value of 1). All analyses were performed with three replicates. The different letters show a significant difference at a probability of $P < 0.05$.

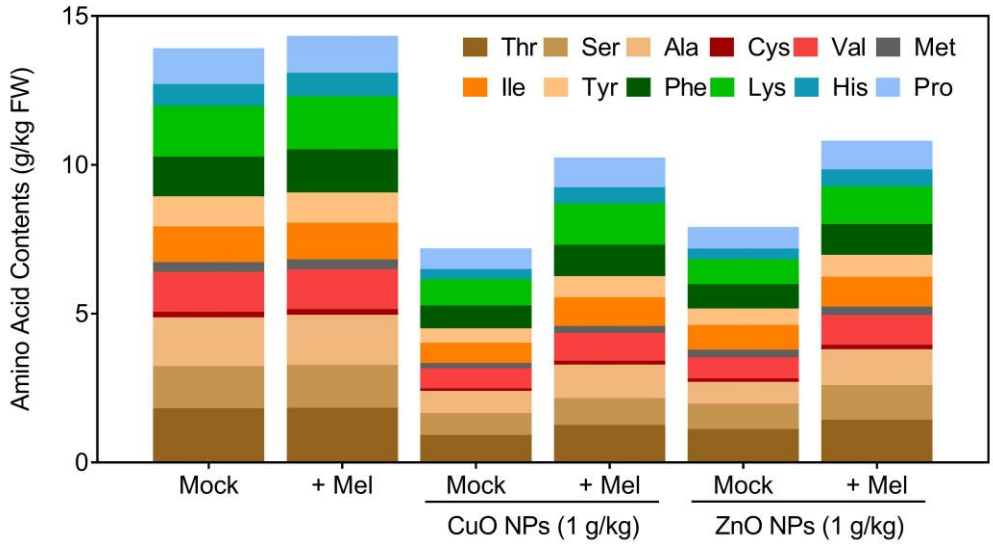

FIGURE S5 The effects of melatonin on the contents of amino acids in rice seedlings under the CuO NPs and ZnO NPs. The amino acid content in leaves of 35-days-old rice seedlings subjected to different treatments were analyzed, respectively. The studies were repeated three times, with the standard deviation (SD) shown by the error bars. Different letters above error bars show the differences at $P < 0.05$. FW, fresh weight.