



**Supplemental Figure 6.** PCR verification and leaf verification confirmed that all transformed plants are hygromycin B positive plants. (a) The T<sub>2</sub> generation of plant leaves phenotypes after hygromycin B treatment. All leaves showed resistance to hydromycin B. (b) The PCR results of *GSN1*-OX and *GSN1*-KO transgenic plants in six rice cultivars.