

**Fig S1 The picture of Gel electrophoresis during the constraction of pOGT vector**

(a) Gel electrophoresis of PCR amplified *ProOLE1::OLE1* fragment (lane 1; amplified fragment: 2245 bp, indicated by arrow). (b) *Xho*Ⅰ and *Sal*Ⅰ digestion of the vector pA7-GFP (lane 2, 3; large fragment: 4591 bp; small fragment: 57 bp; both fragments were indicated by arrows). (c) Colony PCR from five random clones using primers pOLE1-F and pOLE1-R (lane 4-8; amplified fragment: 2245 bp; indicated by arrow). (d) Gel electrophoresis of PCR amplified *ProOLE1::OLE1-GFP* fragment (lane 9, amplified fragment: 2989 bp; indicated by arrow). (e) *Hin*dⅢ digestion of the vector pCXSN (lane 10, 11; fragment: 10802 bp; indicated by arrow). (f) *Hin*dIII digestion of pCXSN-OLE1-GFP (lane 12, 13; large fragment: 10802 bp; small fragment: 2957 bp; both fragments were indicated by arrows ). (g) *Xcm*I digestion of the vector pOGT with mutated promoter and the pCXSN-OLE1-GFP with original promoter. The asterisks indicated the resulting fragments after *Xcm*I digestion. The last lane was the undigested pOGT vector.



**Fig S2 PCR amplification of *GFP*, *HygR*, *ACT*2 fragment from T1 transgenic plants expressing pOGT.**

Lane 1-20 shows the amplification from 20 independent T1 plants. Lane 21 shows the amplification from Arabidopsis wild type plants (Col-0). Lane 22 shows the amplification with no template. Lane 23 shows the amplification from pOGT plasmid. *GFP* fragment: 272 bp, *HygR* fragment: 444 bp, *ACT2* fragment: 188 bp.