

Supplementary Data

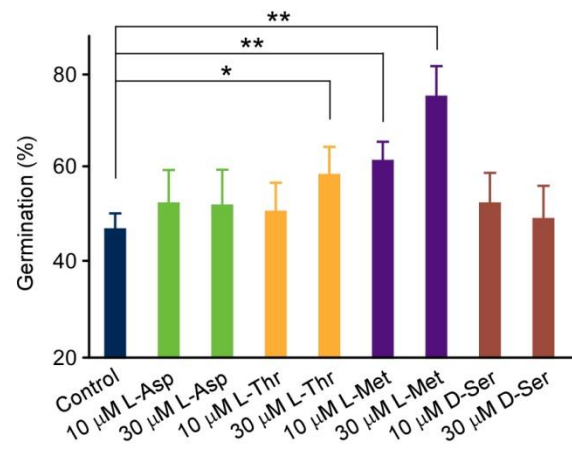


Fig. S1. Effect of amino acids on seed germination. Arabidopsis WT seeds were sown on $\frac{1}{2}$ MS media containing the indicated amino acids (0, 10, or 30 μ M) and incubated at 22°C for 36 h prior to the analysis. Data are from three independent experiments, and error bars represent SD. *, $P < 0.05$; **, $P < 0.01$.

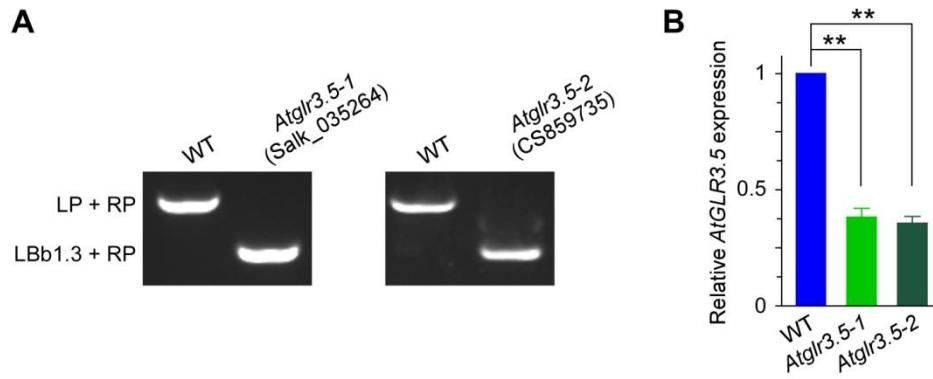


Fig. S2. Genotyping of *AtGLR3.5* T-DNA insertion mutants (named *Atglr3.5-1* and *Atglr3.5-2*) and relative expression of *AtGLR3.5* in the two independent alleles. (A) Genotyping of the T-DNA insertion lines. (B) Expression level of *AtGLR3.5* in the 2-wk-old seedlings of *Atglr3.5-1* or *Atglr3.5-2*. The data shown are from three replicates, and error bars indicate SE. **, $P < 0.01$.

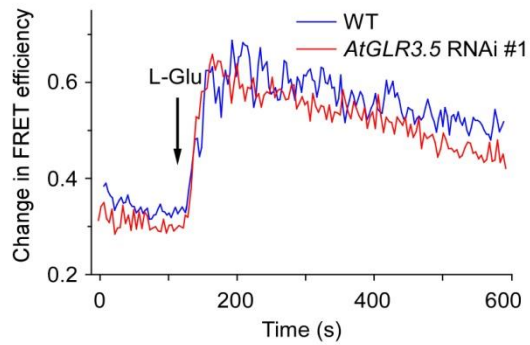


Fig. S3. $[Ca^{2+}]_{\text{cyt}}$ -dependent FRET efficiency changes in WT and *AtGLR3.5* RNAi plants in response to 1 mM L-Glu. The primary roots of Arabidopsis seedlings expressing YC3.60 were used for the analysis and arrows indicate the time points when plants were challenged with L-Glu. Ten seedlings of each genotype were tested under each treatment, and the results are shown.

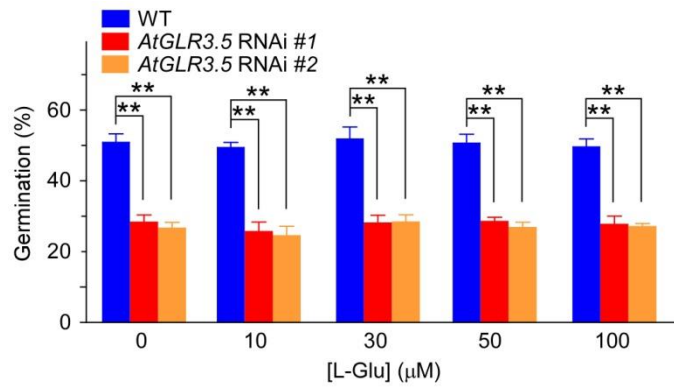


Fig. S4. The germination of WT and two independent *AtGLR3.5* RNAi lines at indicated concentrations of L-Glu. Germination was analyzed after incubation of the seeds at 22°C for 36 h. Data are from three independent experiments, and error bars represent SE. **, $P < 0.01$.

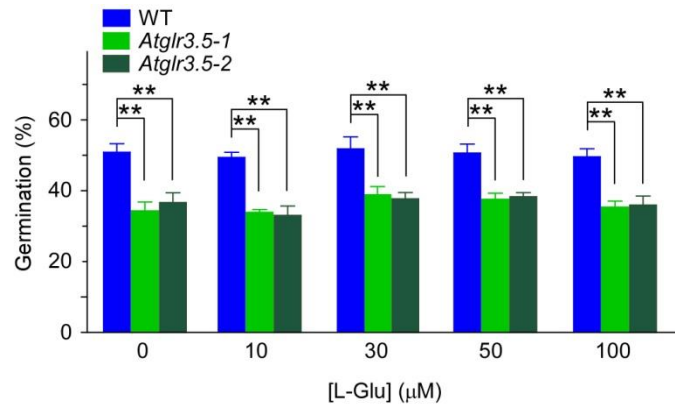


Fig. S5. The germination of WT, *Atglr3.5-1*, and *Atglr3.5-2* seeds at indicated concentrations of L-Glu. Seeds were analyzed for germination after incubation at 22°C for 36 h. Data are from three independent experiments, and error bars represent SE. **, $P < 0.01$.

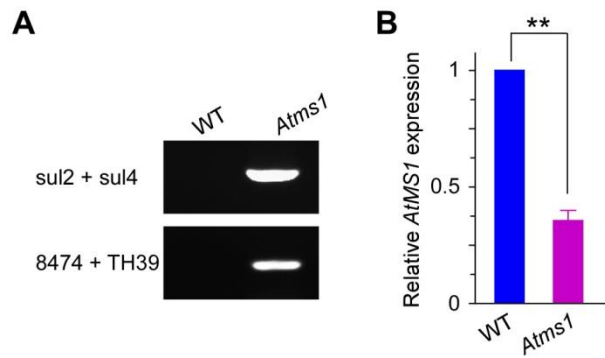


Fig. S6. Genotyping of *Atms1* mutant (A) and relative *AtMS1* transcript level in the mutant (B). A T-DNA insertion line (CS480822) of *AtMS1* gene (At5g17920) was obtained from ABRC and analyzed. For the expression analysis, data are from three technical replicates and shown as means \pm SE. **, $P < 0.01$.

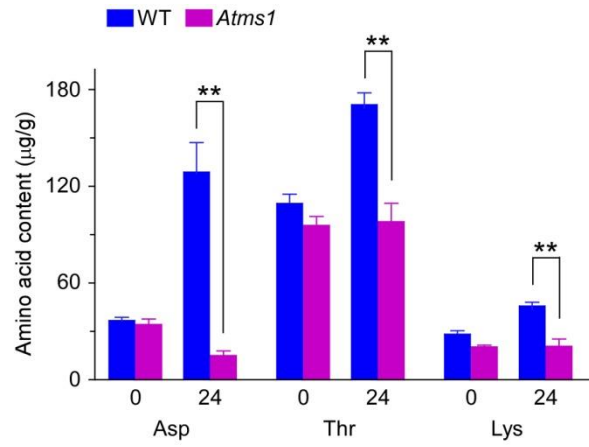


Fig. S7. The contents of Asp, Thr, and Lys in WT and *Atms1* seeds. Seeds were incubated under germination conditions for 0 and 24 h before the analysis. Data shown are from three replicates as means \pm SE. **, $P < 0.01$.