SUPPLEMENTAL MATERIALS

Table S1. γ-glutamyl transferase activity in wild type and *ggt* mutants.
Leaves were removed from 3-week-old soil grown Arabidopsis plants and 200 mg of tissue was ground in 0.4 ml of cold 1 M NaCl, 100 mM Tris-HCl, pH 8.0, 1 mM benzamindine, 1 mM 6-amino-n-hexanoic acid, 1 mM phenylmethylsulfonyl fluoride (PMSF), 1 mM leupeptin 0.1% Triton X-100, and 1 mg of polyvinylpolypyrrolidone (PVPP) using a microcentrifuge tube and pestle (Martin and Slovin, 2000, Ohkama-Ohtsu et al., 2007a). The solution was cleared by centrifugation at 16,000 g for 15 min at 4°C. The supernatant was assayed for GGT activity using 100 mM Tris-HCl (pH 8.0), 5 mM γ-glutamyl-p-nitroanilide hydrochloride (γ-GPNA) and 100 mM glycylglycine by recording the change at 410 nm for 10 min at room temperature in a 1 ml reaction volume where the reaction was initiated by adding 10 to 50 µl of the supernatant. No activity was detectable in leaves of the *ggt1/ggt4* double mutant and we estimate the sensitivity of this assay at 0.1 nmoles mg^{-1} protein min^{-1}. Some of the data in this table has been published previously (Ohkama-Ohtsu et al., 2007a,b).

Line	GGT activity (nmole mg^{-1} protein min^{-1})
Wildtype	8.5 ± 0.6
ggt1	0.8 ± 0.4
ggt4	7.8 ± 0.2
ggt1/ggt4	<0.1