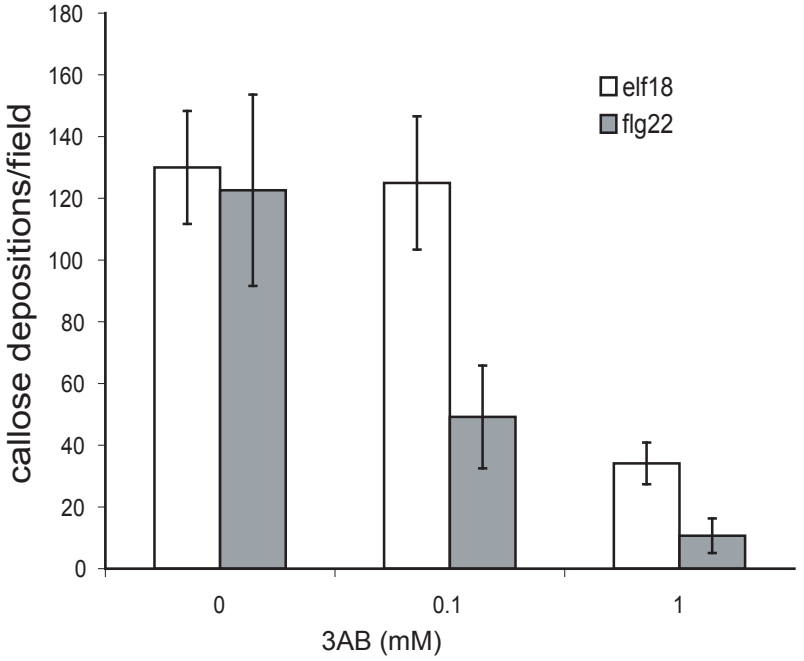
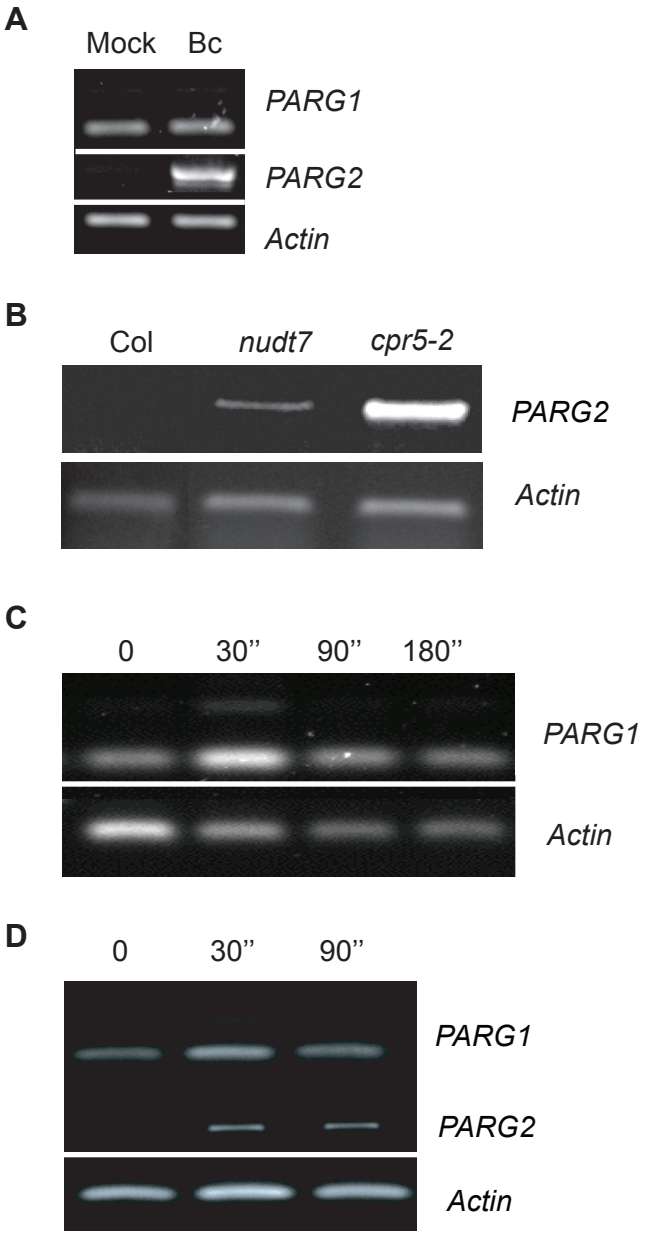
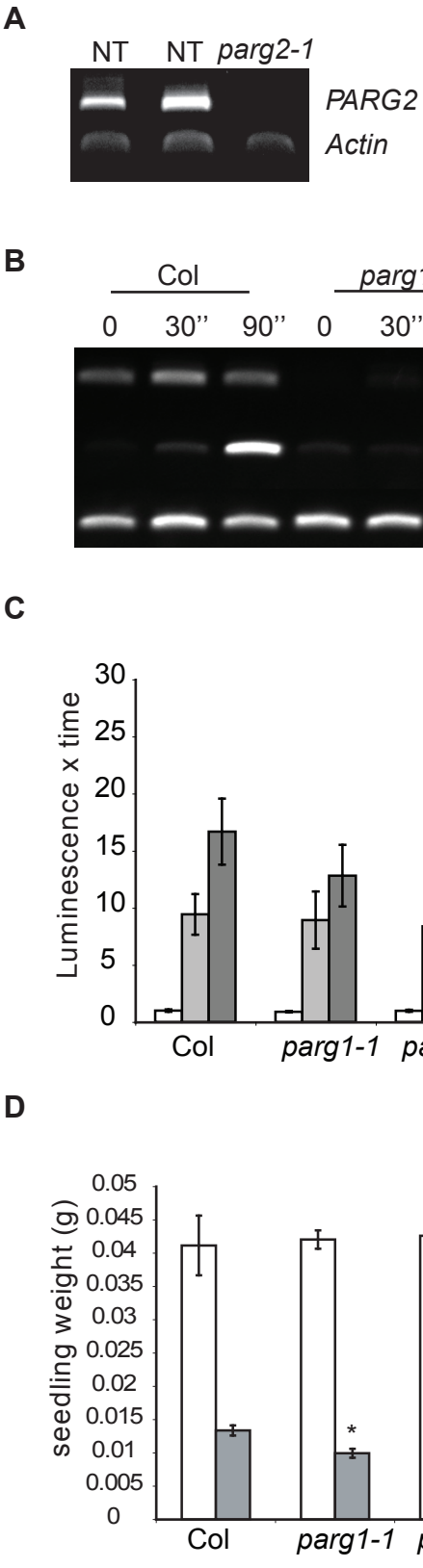


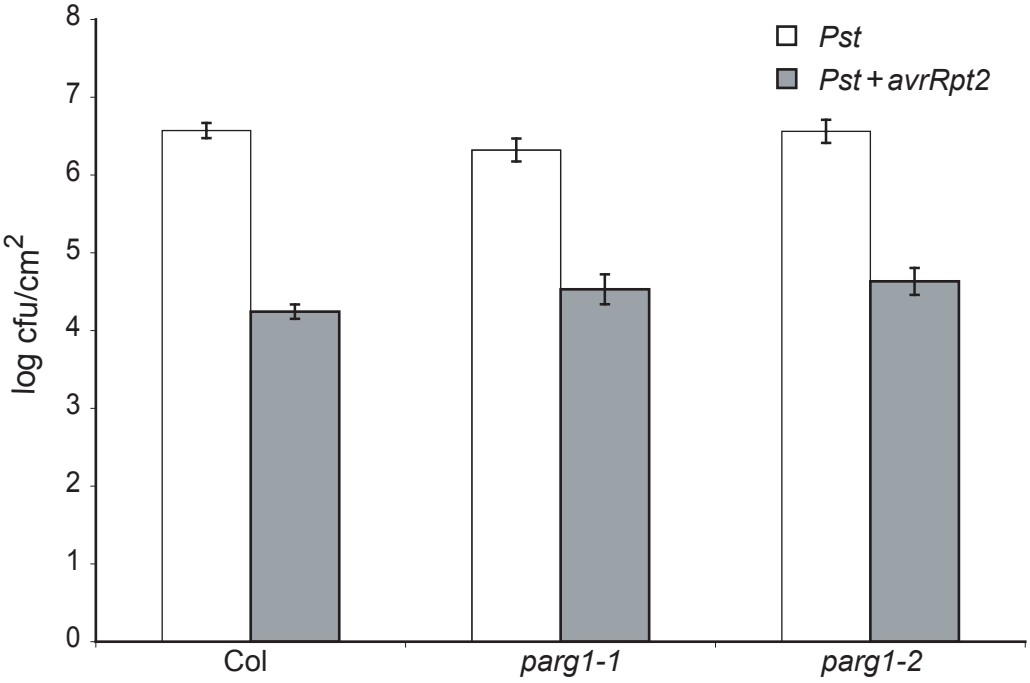
Supplemental Figure S1. Dose-response of callose deposition in presence of PARP inhibitor. Seven day old Arabidospis seedlings were treated with 0.6% DMSO, 0.1 mM 3AB, or 1mM 3AB followed by treatment with 2.5μM flg22 or elf18 for 24 hours. Seedlings were then fixed and visualized for callose deposition (see Methods). Callose counts were determined using NIH ImageJ software from six independent fields representing three independent leaves.



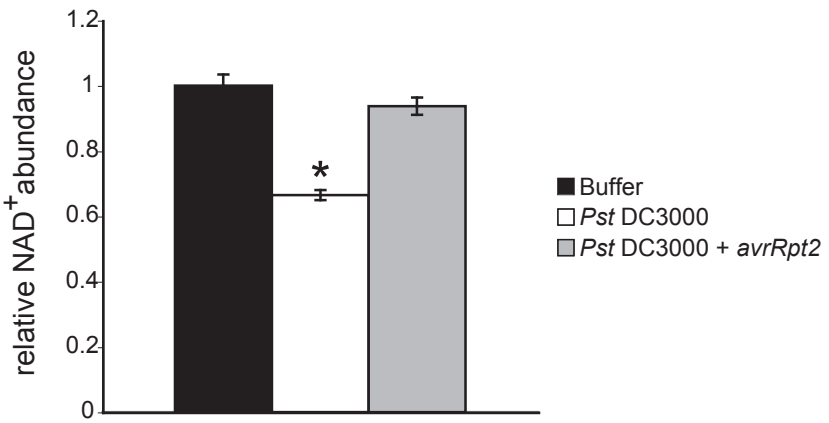
Supplemental Figure S2. RT-PCR to monitor PARG gene expression. RNA extracted from Arabidopsis. A, Adult WT plants 3 dpi with *Botrytis cinerea* spores. B, Untreated WT (Col) and constitutive defense mutant plants. C, 10-day old WT seedlings treated with 2.5μM flg22 for indicated time intervals. D, 10-day old WT seedlings treated with 2.5μM elf18 for indicated time intervals. Experiments for C and D were repeated with at least 2 biological replicates with similar results.



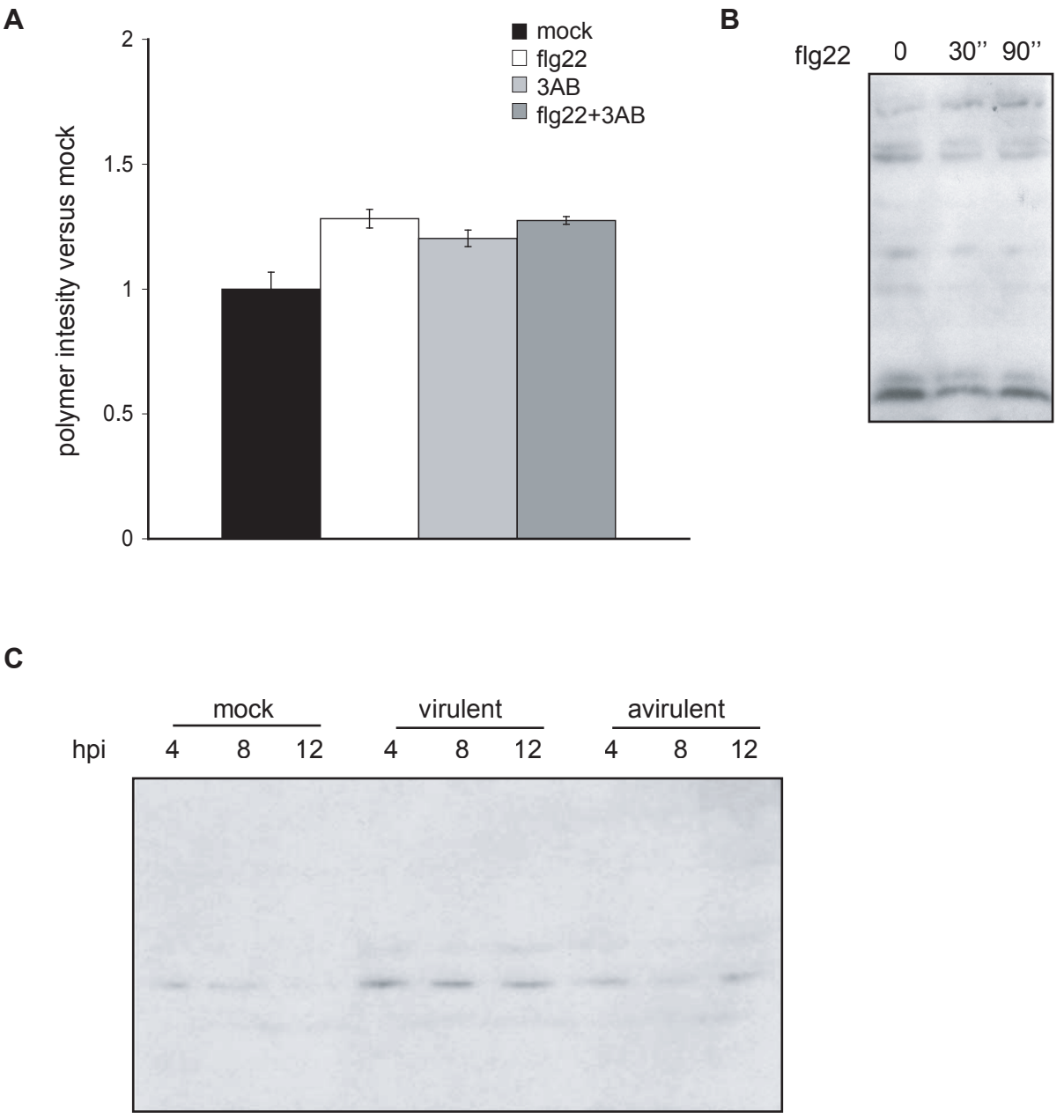
Supplemental Figure S3. *parg* mutant characterization. A, RT-PCR of RNA extracted from a population of seedlings segregating for the T-DNA insertion at the *PARG2* locus, NT=nontransformed. B, RT-PCR of RNA extracted from wild-type or *parg1-1* mutant seedlings treated with 2.5 μM elf18 for the indicated time intervals. C, ROS production in wild-type and *parg* mutant plants treated with water, 1μM elf18, or 1μM flg22. 8 leaves were measured per treatment and the experiment was repeated 3 times. Graph shows area under the curve for all three experiments relative to untreated (water) control. D, Seedling weights of wild-type and *parg* mutants treated with and without 0.1μM elf18 for 10 days. Graph shows mean ± std. error for one respresentative experiment, and asterisks indicate significant difference from wild-type (Col) for the indicated treatments (ANOVA, Tukey simultaneous test, $p<0.001$) across three independent biological replicates of the experiment. The experiment with *parg1-1* was performed seven times with similar small but significant differences observed.



Supplemental Figure S4. Bacterial growth measured 3 days following inoculation of 6 week old plants with 1x10^{5}cfu/ml *Pseudomonas syringae* pv. *tomato* DC300 (*Pst*) +/- *avrRpt2*. No significant differences were observed in bacterial growth between wild-type and *parg* mutant plants. Graph shows a representative result from one of four independent experiments that gave similar results.



Supplemental Figure S5. Total cellular NAD^+ concentrations as measured by enzymatic cycling assay (see Methods) in adult leaves vaccum-infiltrated with $1x10^7$ CFU/ml virulent (DC3000) or avirulent *Pseudomonas syringae* pv tomato (*Pst*) DC3000 -/+ *avrRpt2*, or mock-treated (buffer). All NAD^+ concentrations are adjusted for total protein concentrations and normalized to untreated samples. Bars represent the standard error of the mean (Tukey's simultaneous test; *=$p < 0.005$ vs. mock, for three independent experiments).



Supplemental Figure S6. Polymer levels and poly(ADP-ribosyl)ated proteins following biotic stress. A, Total cellular poly(ADP-ribose) polymers in seedlings treated with water (mock), 1μM flg22 and/or 2.5mM 3AB. Dot intensity was quantified using Kodak imaging software (n=3). B and C, Poly(ADP-ribosyl)ated proteins in seedlings treated with 1μM flg22 (B) and adult plants 12 hrs. after infiltration with *Pst* DC3000 ± *avrRpt2* (C), detected by SDS-PAGE and immunoblotting with polyclonal anti-[poly(ADP-ribose)] antibody.

Supplemental Table SI. Hypersensitive response in adult Arabidopsis leaves after inoculation with *Pseudomonas syringae* pv. *tomato* DC3000 +/- *avrRpt2*, or after induction of *avrRpt2* expression in transgenic dex:a*vrRpt2* plants.

Genotype	*Pst* DC3000	*Pst* DC3000 *avrRpt2*$^{+}$	+ Dex	3AB + Dex
wt	-	+	ND	ND
parg1-1	-	+	ND	ND
parg2-1	-	+	ND	ND
dex:avrRpt2	ND	ND	+	+

+: Extensive macroscopic cell death; -: little or no cell death; ND = not determined. Hypersenstive response monitored by visual scoring of leaves 24 hours following inoculation with $1x10^{7}$ cfu/ml *Pst* DC3000 strains or spraying with 3AB or DMSO and dexamethosone. Note that 3AB was not used with pathogen inoculations due to concerns of 3AB toxicity to the bacteria.