

Supporting Information Legends

Supplemental Figure 1. The *dmr6-1* mutant is resistant to *P. syringae* infection. Six-week old *dmr6-1* plants (B) show less symptom formation compared to the parental line *Ler eds1-2* (A) 3 days after infection with *P. syringae*. Susceptibility is regained in the *dmr6-1* mutant complemented with *35S:DMR6* (C). (D) Growth of *P. syringae* was analyzed in *dmr6-1*, *Ler eds1-2*, and *dmr6-1 35S:DMR6* plants at 0, 1 and 3 dpi with a bacterial suspension (OD 0.05 spray-inoculation). Error bars represent standard error of 4 replicates. Student's *T*-test was used to determine the significance of difference; * and ** indicate significant difference at $P < 0.05$ and 0.01 , respectively.

Supplemental Figure 2. Disease phenotype of *Ler eds1-2*, *dmr6-1* and *dmr6-1 35S:DMR6* 7 days after *Phytophthora capsici* inoculation. (A) *Ler eds1-2* is highly susceptible while (B) the *dmr6-1* mutant shows resistance. (C) Complementation of the *dmr6-1* mutant with an overexpression construct of *DMR6* renders the plants highly susceptible again. (D) Percentage of dying plants after 7 days.

Supplemental Figure 3. Overexpression of *DMR6* results in reduced levels of *PR*-gene transcript. *PR-1*, *PR-2* and *PR-5* have lower basal levels in the *DMR6* overexpressing plants compared to wild type Col-0 plants. Bars represent mean fold change compared with Col-0, with the error bars representing standard deviation.

Supplemental Figure 4. Catalytic inactive *DMR6* remains resistant to *H. arabidopsidis* infection. (A) Amount of conidiophores per plant of 14-day old seedlings 5 days post infection of *Ler eds1-2*, *dmr6-1*, *35S:DMR6*, *35S:DMR6 H212D*, *35S:DMR6 H269Q* in the *dmr6-1* mutant background. Error bars represent standard deviation. Asterisks indicate significant different from *dmr6-1* (*T*-test with $p < 0.0001$). (B) Western blot analysis of *DMR6*, *DMR6 H212D* and *DMR6 H269Q*.

Supplemental figure 5. Multiple alignment of Arabidopsis *DMR6*, *DLO1* and *DLO2*. Alignment is created using the Clustal Omega tool. Asterisks above the alignment indicate catalytic residues.

Supplemental Figure 6. Overexpression of two distantly related oxygenases fails to complement *dmr6*-mediated resistance. Amount of conidiophores per plant of 14-day old seedlings of *Ler eds1-2*, *dmr6-1*, and *35S:DMR6*, *35S:DLO1*, *35S:YFP*, *35S:At3g60290*, *35S:At1g06620* in the *dmr6-1* background. Error bars indicate standard deviation. This experiment has been repeated multiple times with similar results.

Supplemental Figure 7. Overexpression of *DLO1* and *DLO2* increases susceptibility towards *H. arabidopsidis*. Amount of spores per mg of above ground parts of Col-0, Col *eds1-2*, and 2 independent T3 lines of *35S:DMR6*, *35S:DLO1*, and *35S:DLO2* plants at 5 dpi. Bars represent mean with error bars standard deviation ($n=5$). This experiment has been repeated twice with similar results. The expression of the transgene was confirmed by qPCR.

Supplemental Table 1. List of selected microarray experiments dealing with biotic and abiotic stress.
Official ID shown together with title and description of the experiment.