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### Atmospheric CO<sub>2</sub> Alters Resistance of Arabidopsis to *Pseudomonas syringae* by Affecting Abscisic Acid Accumulation and Stomatal Responsiveness to Coronatine

Zhou, Y.; Vroegop-Vos, I.; Schuurink, R.C.; Pieterse, C.M.J.; Van Wees, S.C.M.

**DOI**

[10.3389/fpls.2017.00700](https://doi.org/10.3389/fpls.2017.00700)

**Publication date**

2017

**Document Version**

Other version

**Published in**

Frontiers in Plant Science

[Link to publication](#)

**Citation for published version (APA):**

Zhou, Y., Vroegop-Vos, I., Schuurink, R. C., Pieterse, C. M. J., & Van Wees, S. C. M. (2017). Atmospheric CO<sub>2</sub> Alters Resistance of Arabidopsis to *Pseudomonas syringae* by Affecting Abscisic Acid Accumulation and Stomatal Responsiveness to Coronatine. *Frontiers in Plant Science*, 8, Article 700. <https://doi.org/10.3389/fpls.2017.00700>

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## Supplemental Information

Article title: Atmospheric CO<sub>2</sub> alters resistance of *Arabidopsis* to *Pseudomonas syringae* by affecting abscisic acid accumulation and stomatal responsiveness to coronatine

Authors: Yeling Zhou, Irene Vroegop-Vos, Robert C Schuurink, Corné MJ Pieterse and Saskia CM Van Wees

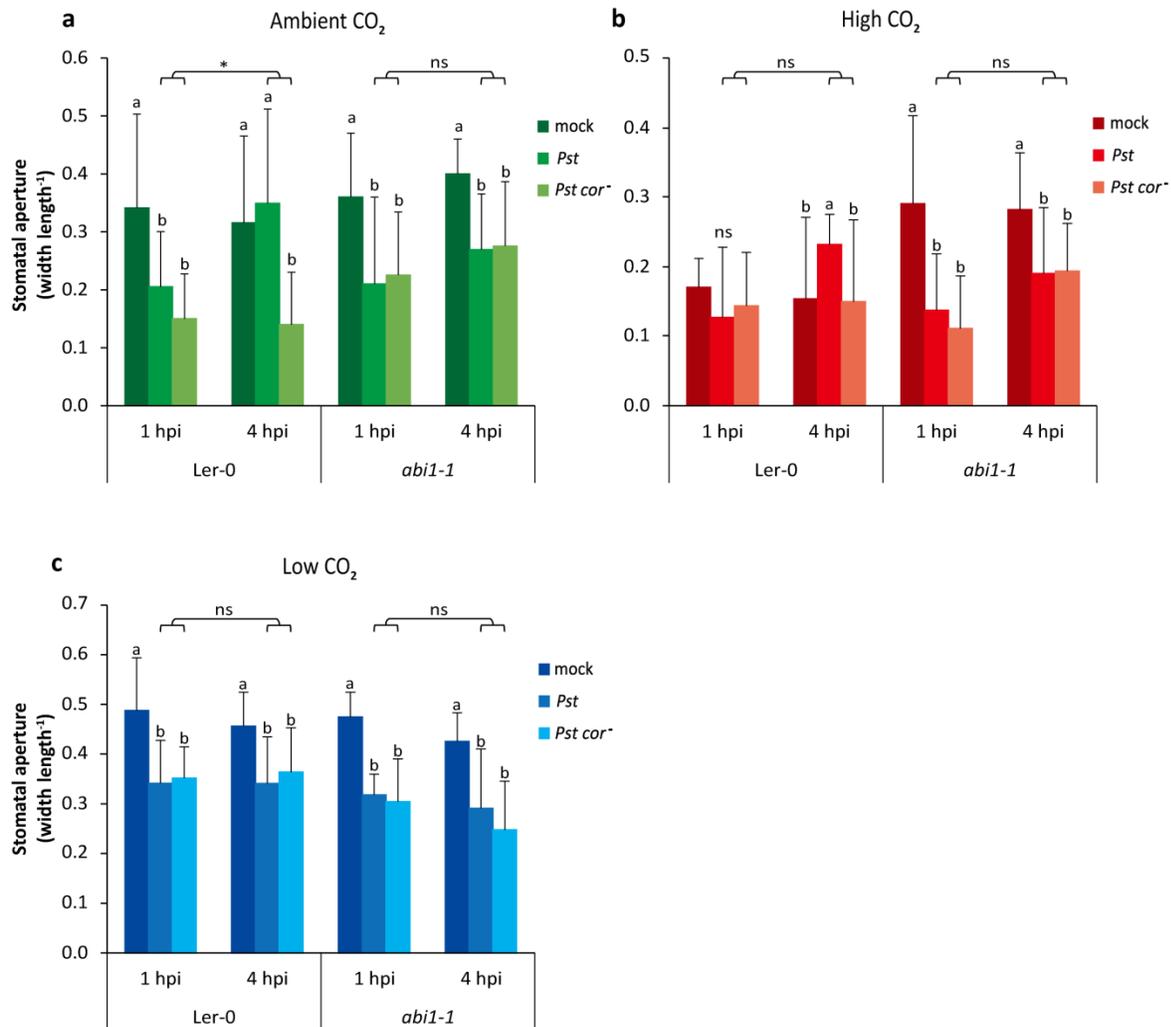
**Fig. S1:** Effect of ABA signaling on stomatal aperture in response to *Pst* and *Pst cor* under three CO<sub>2</sub> conditions.

**Fig. S2:** Effect of ABA signaling on atmospheric CO<sub>2</sub>-altered resistance to *Pst*.

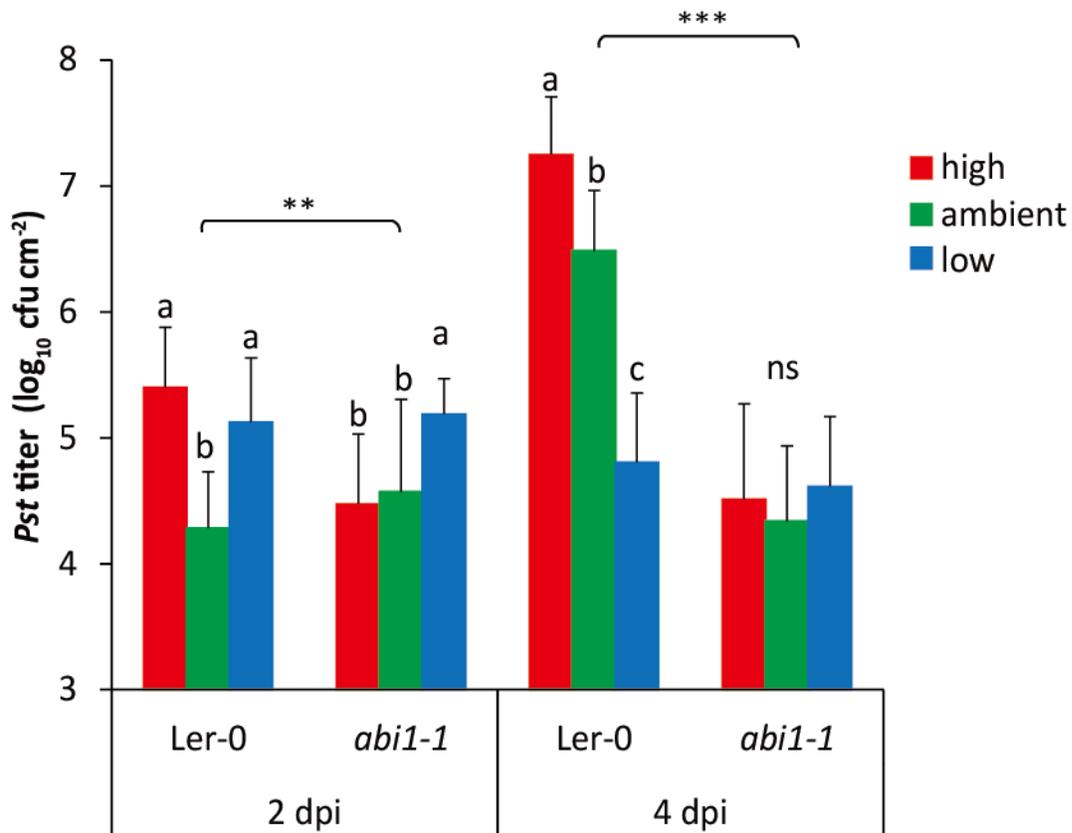
**Fig. S3:** Effect of atmospheric CO<sub>2</sub> on ABA-induced stomatal closure.

**Fig. S4:** The role of ABA signaling in *Arabidopsis* resistance to *Pst*.

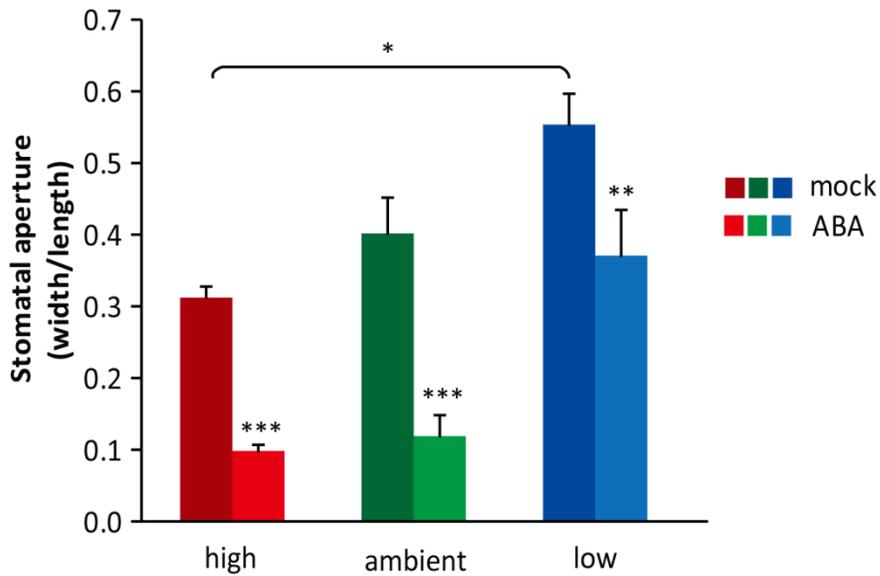
**Fig. S1: Effect of ABA signaling on stomatal aperture in response to *Pst* and *Pst cor* under three different CO<sub>2</sub> conditions.** Arabidopsis leaves of wild-type Ler-0 and ABA insensitive mutant *abi1-1*, cultivated under ambient (S1a), high (S1b), and low CO<sub>2</sub> (S1c) conditions, were dip-inoculated with a mock solution, *Pst* or *Pst cor* ( $5 \times 10^7$  cfu/ml). Stomatal aperture was measured at 1 h and 4 h after dip inoculation. Depicted are the averages of stomatal aperture ( $\pm$ SD) of six leaves. Different letters indicate statistically significant differences between the treatments of one plant genotype at the indicated time point (two-way ANOVA, Fisher's LSD test,  $P < 0.05$ ; ns, not significant). Indications above the brackets specify the interaction (bacterium genotype  $\times$  time) between the two *Pst* genotype treatments (wild-type and mutant) and the time (1 hpi and 4 hpi) within the same Arabidopsis genotype (ns, not significant). Fig. S1a is representative of two independent experiments; the experiments depicted in Fig. S1b and S1c have not been repeated.



**Fig. S2: Effect of ABA signaling on atmospheric CO<sub>2</sub>-altered resistance to *Pst*.** Growth of *Pst* in wild-type Ler-0 and the mutant *abi1-1* measured at 2 days and 4 days after dip inoculation. Indicated are the averages of the log<sub>10</sub>-transformed bacterial titer ( $\pm$ SD; per leaf area) from eight biological replicates. Different letters indicate statistically significant differences between the CO<sub>2</sub> treatments within one line at the indicated time point (two-way ANOVA, Fisher's LSD test,  $P < 0.05$ ; ns, not significant). Indications above the brackets specify the interaction (CO<sub>2</sub> condition  $\times$  Arabidopsis genotype) between the three CO<sub>2</sub> conditions and the two Arabidopsis genotype (wild-type Ler-0 and the mutant *abi1-1*) at the same time point (\*\*,  $P < 0.01$ ; \*\*\*,  $P < 0.001$ ). The figure is representative of two independent experiments.



**Fig. S3: Effect of atmospheric CO<sub>2</sub> on ABA-induced stomatal closure.** Leaves of 4-week-old Arabidopsis Col-0 plants, cultivated until treatment under the ambient CO<sub>2</sub> condition, were exogenously supplied with a mock solution or ABA (15 μM), after which the plants were transferred to either high, ambient or low CO<sub>2</sub> conditions. Stomatal aperture was determined 4 h after treatment. Depicted are the averages of stomatal aperture (±SD) of six leaves. Asterisks indicate statistically significant differences between the treatments within the same atmospheric CO<sub>2</sub> level (Student's *t*-test, \*\*\*, *P*<0.0001, \*\*, *P*<0.001). The asterisk above the bracket indicates there is a statistically significant interaction between the three CO<sub>2</sub> conditions and the treatment (two-way ANOVA, Fisher's LSD test, *P*<0.05). The figure is representative of two independent experiments.



**Fig. S4: The role of ABA signaling in Arabidopsis resistance to *Pst*.** Growth of *Pst* in the ABA hypersensitive mutant *abi1-2*, wild-type Col-0 and the ABA deficient mutant *aba2-1* measured at 3 h, 2 days and 4 days after dip inoculation under the ambient CO<sub>2</sub> condition. Indicated are the averages of the log<sub>10</sub>-transformed bacterial titer ( $\pm$ SD; per g of leaves) from eight biological replicates. Different letters indicate statistically significant differences between the genotypes at the specific time point (two-way ANOVA, Fisher's LSD test,  $P < 0.05$ ; ns, not significant). Indications above the brackets specify the interaction (Arabidopsis genotype  $\times$  time) between the three Arabidopsis genotype (wild-type Col-0 and the mutants *abi1-2*, *aba2-1*) and time (3 hpi and 4 dpi) (\*\*\*,  $P < 0.001$ ). The figure is representative of two independent experiments.

