***New Phytologist* Supporting Information**

Article title: **The BIG protein distinguishes the process of CO_2-induced stomatal closure from the inhibition of stomatal opening by CO_2.**

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The following Supporting Information is available for this article:

Fig. S1 The*big-1* mutant fails to display elevated (800 ppm) CO_2-induced reduction in stomatal conductance.

Fig. S2 PCR amplification of the *BIG* fragment from cDNAs of WT and mutant plants.

Fig. S3 Epidermal cell density of WT and *BIG* gene mutant seedlings grown at elevated 1,000 ppm [CO_2].

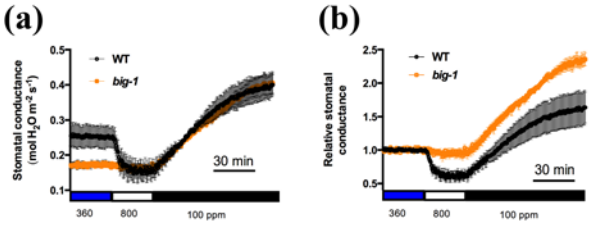

Fig. S1 (a) In contrast to WT, the *big-1*mutant fails to display elevated (800 ppm) CO_2-induced reduction in stomatal conductance, but exhibits a WT response when exposed to low (100 ppm) CO_2. Error bars represent ± SE (representative data, n=4). (b) Relative stomatal conductance in (a). Error bars represent ± SE (representative data, n=4).

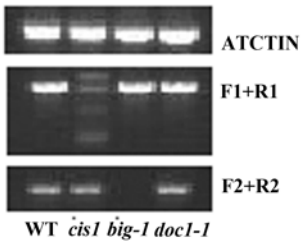

Fig. S2 PCR amplification of the *BIG* fragment from cDNAs of WT and mutant plants showed a complex PCR band pattern of *cis1* and only truncated *BIG* transcript present in *big-1* whereas no change in mRNA abundance is detected in the *doc1-1* mutant. Primer binding sites as indicated in Fig. 2a. *ACTIN* was usedas a reference gene.

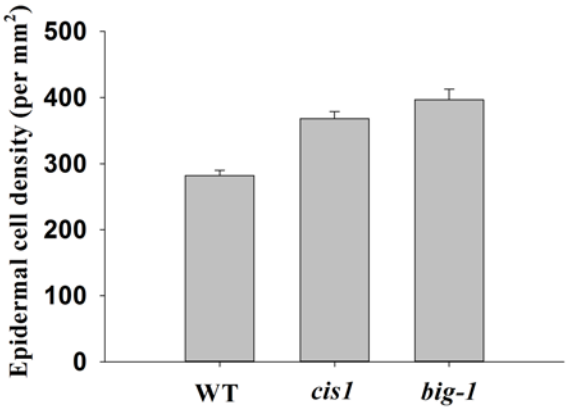

Fig. S3 Epidermal cell density of WT and *BIG*gene mutant seedlings grown at elevated 1,000 ppm [CO_2].