

## Supplemental Material

# Carbon-11 Radiotracing Reveals Physiological and Metabolic Responses of Maize Grown under Different Regimes of Boron Treatment

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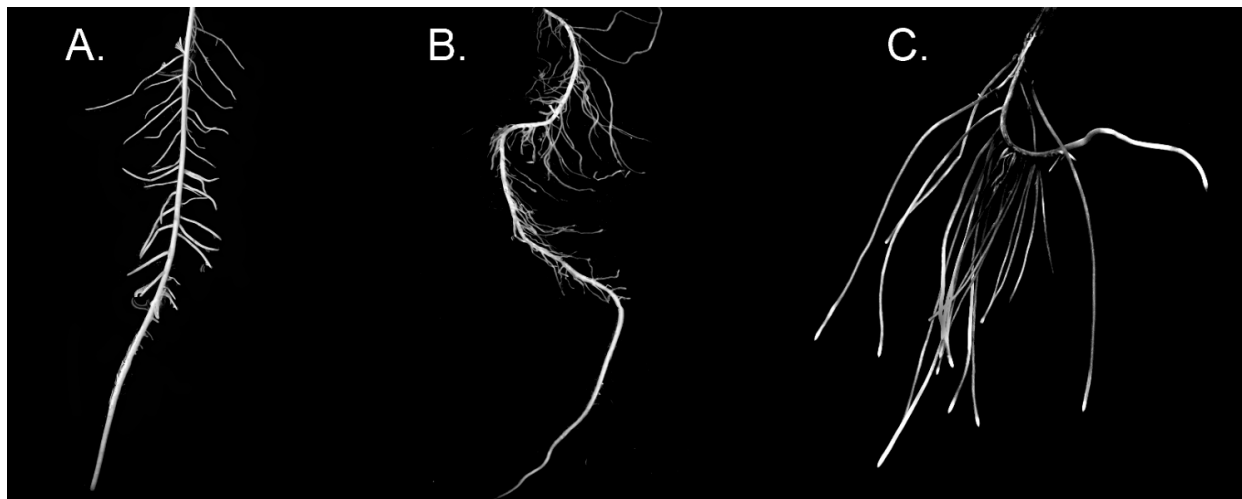
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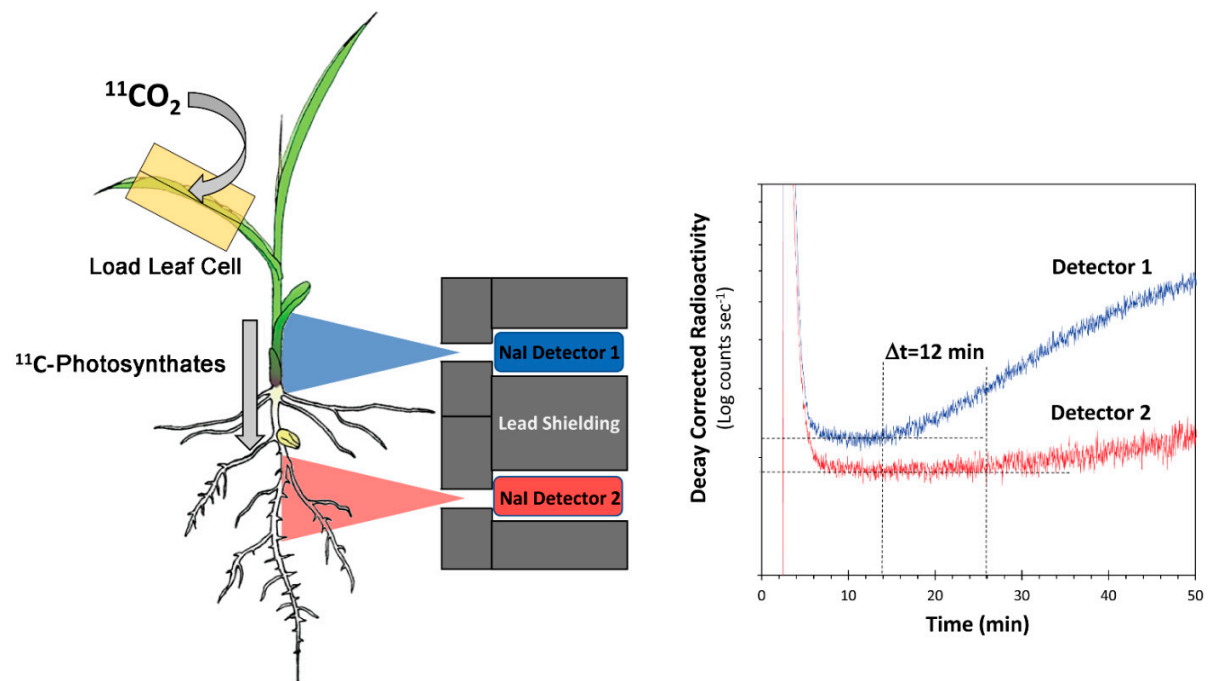
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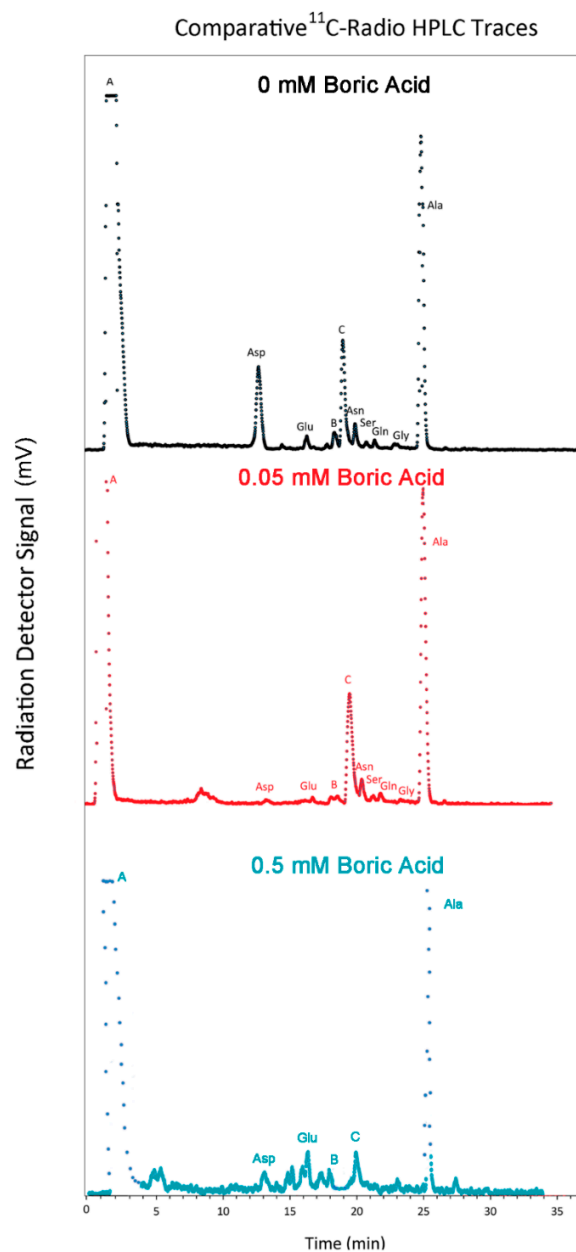
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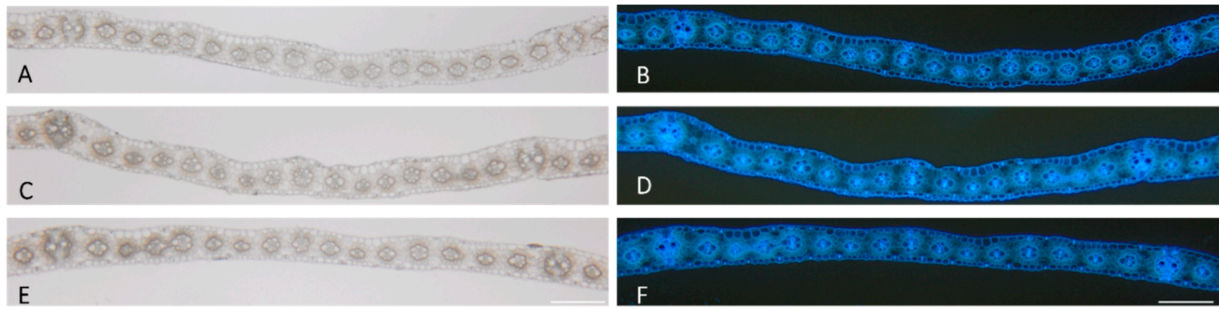
**Figure S1.** Isolated roots from plants grown under 0 mM boric acid (Panel A), 0.05 mM boric acid (Panel B) and 0.5 mM boric acid (Panel C) were floated in a tray of water, digitally photographed, and subjected to root analyses using AmScope software.



**Figure S2.** Experimental setup for measuring transport of  $^{11}\text{C}$ -photosynthates across plant tissues.



**Figure S3.** Radio HPLC trace showing elution of  $^{11}\text{C}$ -amino acids and non-amino acid metabolites. Peaks designated by letters A, B & C were not amino acids but other unidentified radiolabeled metabolites that eluted the HPLC column. All data was decay corrected to a common timepoint and normalized to the same level of  $^{11}\text{C}$ -alanine for comparison.



**Figure S4.** Cross sections of leaves showed no appreciable changes of leaf anatomy for plants grown under 0 mM boric acid (BA) and 0.5 mM BA treatments. Panels A and B; C and D; E and F are free hand leaf cross sections from plants grown under high boron concentration (0.5 mM BA), normal boron concentration (0.05 mM BA) and low boron concentration (0 mM BA), respectively. Panels A, B and C were imaged under Bright Field while Panels B, C, D were imaged under UV light. Scale bar = 200 $\mu$ m.