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supplementary materials

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## **Induction of resistance to diseases in plant by aerial ultrasound irradiation**

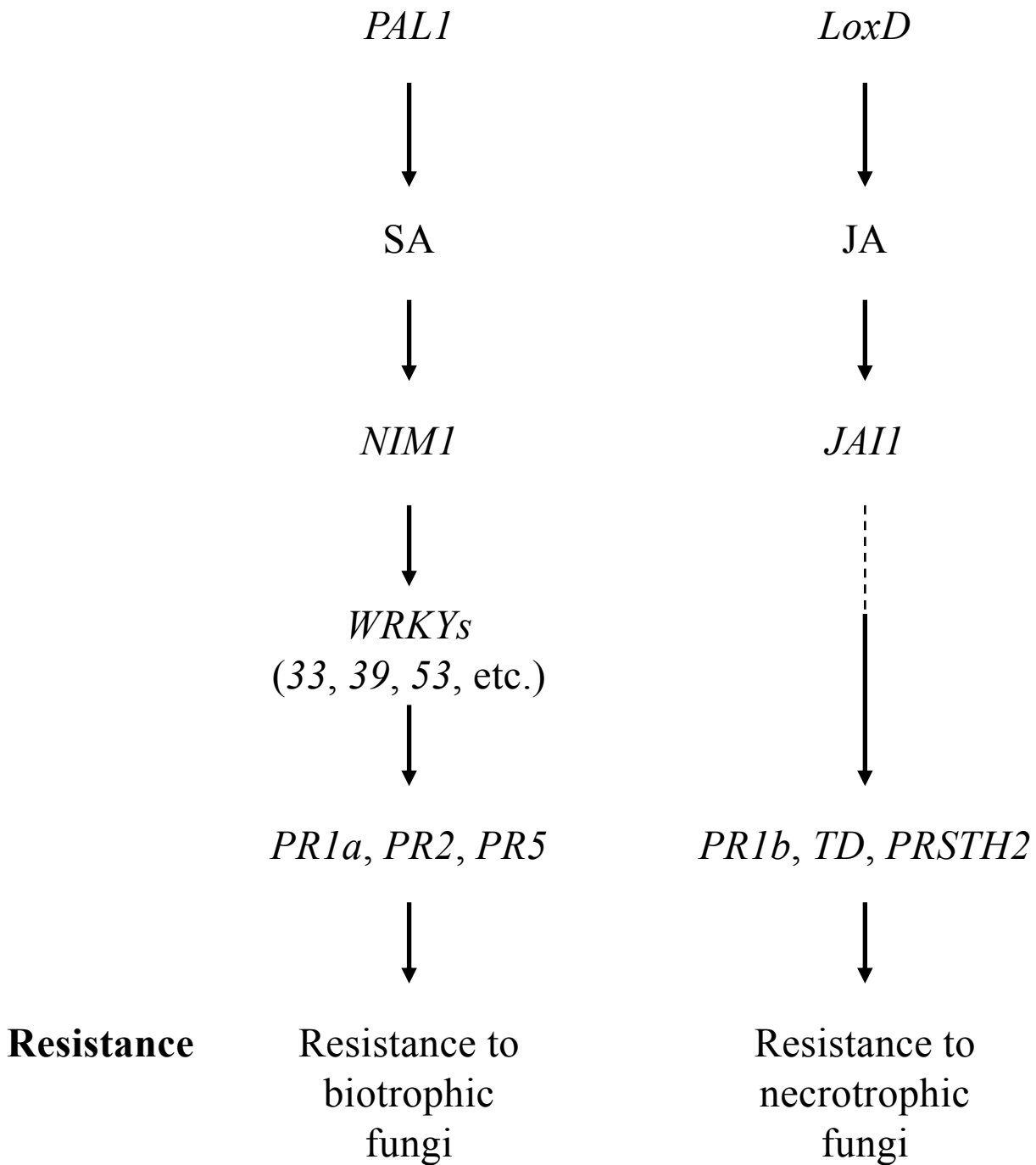
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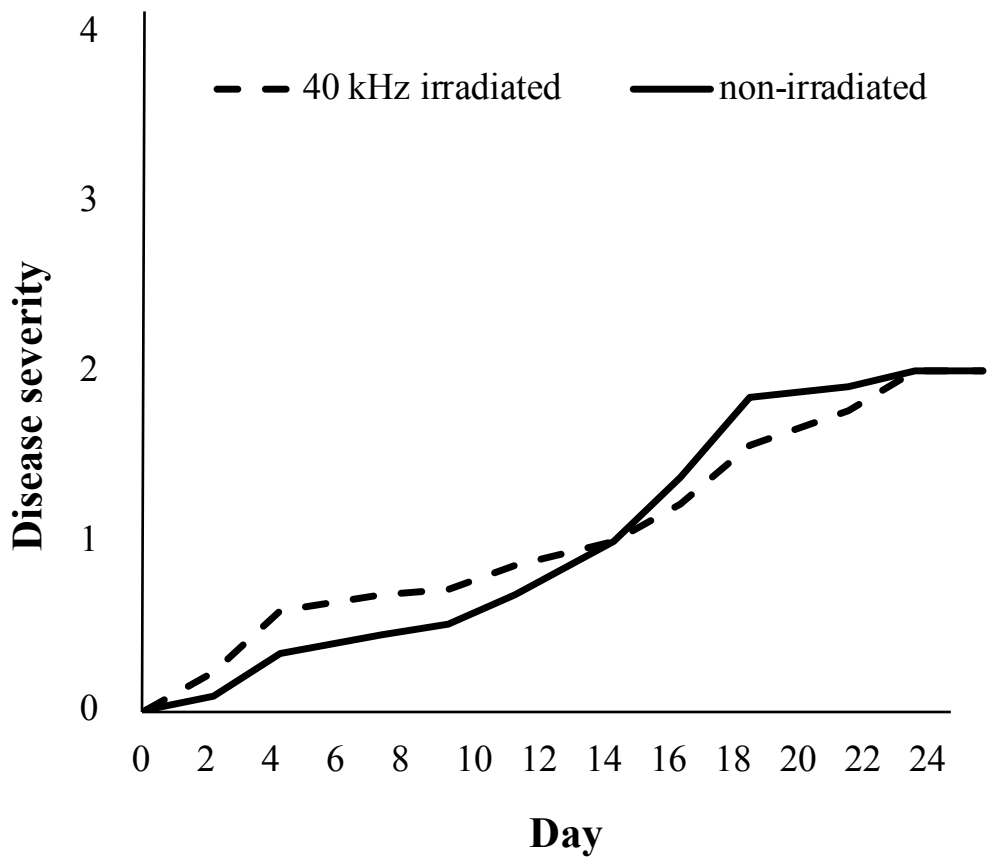
*<http://pssj2.jp/eng/>*

### SA signaling pathway

### JA signaling pathway



**Fig. S1.** These reported pathways were suggested to be involved in disease resistance in tomatoes. Biotrophic fungi and necrotrophic fungi activate the SA- and JA-signaling pathway, respectively.<sup>25,26,34,35)</sup>



**Fig. S2.** Lettuce powdery mildew was not suppressed by ultrasound irradiation. This experiment using lettuce cv. Flarebell (Snow Brand Seed Co.) was conducted in the greenhouse in Ogimi, Okinawa under the cooperation of Earthnote Co. in 2018. The lettuce powdery mildew fungus, *Erysiphe* sp., was maintained on lettuce plants in a greenhouse. Lettuce plants presenting signs of powdery mildew were placed as an inoculum among the tested lettuce seedlings. Three-week-old lettuce plants (120 plants for each treatment) were transplanted to hydroponic culture and started to be irradiated ultrasound (40.5 kHz, *ca.* 100 dB, intermittent pulse wave) with a traveling device (for a  $5 \times 1$  m irradiation area, 2 m/min) for approximately 1 month until harvesting. The disease incidence of each plant was evaluated every 2 days from 0 to 4 using the following index: 0, no symptoms; 1, lower foliar area of 0–50% indicating powdery mildew symptoms; 2, lower foliar area of 50–100%; 3, upper foliar area of 0–50%; 4, upper foliar area of 50–100%.