

Description of Additional Supplementary Files:

Supplementary Movie 1 | Touch-induced $[Ca^{2+}]_{cyt}$ increases at tertiary pulvini and leaflet movements. The tip of a pinna was touched by tweezers (white arrow).

Supplementary Movie 2 | Wound-induced $[Ca^{2+}]_{cyt}$ increases at tertiary pulvini and leaflet movements. A leaflet was wounded by scissors (white arrow).

Supplementary Movie 3 | Wound-induced $[Ca^{2+}]_{cyt}$ increases at tertiary pulvini and leaflet movements in a leaf. A leaflet was wounded by scissors.

Supplementary Movie 4 | Wound-induced $[Ca^{2+}]_{cyt}$ changes at tertiary pulvini and leaflet movements in a La^{3+} -treated leaf. A leaflet was wounded by scissors.

Supplementary Movie 5 | Wound-induced $[Ca^{2+}]_{cyt}$ signal propagation in a leaf. The wounded site (white arrow) and $[Ca^{2+}]_{cyt}$ signal propagation (yellow arrows) are indicated.

Supplementary Movie 6 | Wound-induced $[Ca^{2+}]_{cyt}$ change in a La^{3+} -treated leaf. The wounded site is indicated by a white arrow.

Supplementary Movie 7 | Wound-induced $[Ca^{2+}]_{cyt}$ change in a EGTA-treated leaf. The wounded site is indicated by a white arrow.

Supplementary Movie 8 | Wound-induced $[Ca^{2+}]_{cyt}$ and electrical signals propagating basipetally through rachilla in a leaf. The wounded site (white arrow) and the $[Ca^{2+}]_{cyt}$ signal propagation (yellow arrow) are indicated.

Supplementary Movie 9 | Wound-induced $[Ca^{2+}]_{cyt}$ and electrical signals propagating basipetally through rachilla in a leaf. The wounded site (white arrow) and $[Ca^{2+}]_{cyt}$ signal propagation (yellow arrow) are indicated. This movie is a control experiment for 50 mM La^{3+} treatment (Supplementary Movie 11).

Supplementary Movie 10 | Wound-induced $[Ca^{2+}]_{cyt}$ and electrical signals propagating acropetally through rachilla in a leaf. The wounded site (white arrow) and $[Ca^{2+}]_{cyt}$ signal

propagation (yellow arrow) are indicated. This movie is a control experiment for 50 mM La³⁺ treatment (Supplementary Movie 12).

Supplementary Movie 11 | Wound-induced [Ca²⁺]_{cyt} and electrical signals did not propagate basipetally through rachilla in a La³⁺-treated leaf. The wounded site is indicated by a white arrow.

Supplementary Movie 12 | Wound-induced [Ca²⁺]_{cyt} and electrical signals did not propagate acropetally through rachilla in a La³⁺-treated leaf. The wounded site is indicated by a white arrow.

Supplementary Movie 13 | Wound-induced [Ca²⁺]_{cyt} and electrical signals propagating basipetally through rachilla in a leaf. The wounded site (white arrow) and [Ca²⁺]_{cyt} signal propagation (yellow arrow) are indicated. This movie is a control experiment for 50 mM EGTA treatment (Supplementary Movie 15).

Supplementary Movie 14 | Wound-induced [Ca²⁺]_{cyt} and electrical signals propagating acropetally through rachilla in a leaf. The wounded site (white arrow) and [Ca²⁺]_{cyt} signal propagation (yellow arrow) are indicated. This movie is a control experiment for 50 mM EGTA treatment (Supplementary Movie 16).

Supplementary Movie 15 | Wound-induced [Ca²⁺]_{cyt} and electrical signals did not propagate basipetally through rachilla in an EGTA-treated leaf. The wounded site is indicated by a white arrow.

Supplementary Movie 16 | Wound-induced [Ca²⁺]_{cyt} and electrical signals did not propagate acropetally through rachilla in an EGTA-treated leaf. The wounded site is indicated by a white arrow.

Supplementary Movie 17 | Herbivory-induced [Ca²⁺]_{cyt} signals and leaflet movements. The feeding site is indicated by a white arrow. Note that the grasshopper is naturally fluorescent.

Supplementary Movie 18 | Herbivory-induced [Ca²⁺]_{cyt} signals and leaflet movements. The feeding site is indicated by a white arrow. Note that the grasshopper is naturally fluorescent.