**SUPPLEMENTAL FIGURE AND MOVIE CAPTIONS:**

**Supplementary Figure 1:** Genetic mapping of Del540 marker in two F2 populations segregating for *Rsv3*-type resistance. The genetic mapping data for other markers in ‘L29 x Lee68’ and ‘L29 x Sowon’ populations was obtained from Suh et al. (2011).

**Supplementary Movie 1:** Rotation of a structural model of the Glyma14g38533 LRR domain represented as a ribbon structure. Residues that are conserved in Glyma14g38533 alleles from the susceptible Williams 82 and resistant L29 lines are shown in red. Polymorphic sites are shown in blue.

**Supplementary Movie 2:** Rotation of a structural model of the Glyma14g38533 LRR domain with the predicted surface shown. Residues that are conserved in Glyma14g38533 alleles from the susceptible Williams 82 and resistant L29 lines are shown in red. Polymorphic sites are shown in blue.