

**Figure S1.** *In planta* expression of HIGS constructs and target genes. Total RNA was isolated from agroinfiltrated melon cotyledons and the expression of HIGS constructs and target genes was analyzed by RT-qPCR. (A) Expression of HIGS constructs. The relative expression of HIGS constructs PxCDA-HIGS and CmCERK1-HIGS was analyzed 24 h after agro-infiltration in absence of the fungal pathogen. Relative transcription levels of HIGS constructs were normalized to the transcription of the endogenous control melon *CmACT7* gene (XM\_008462689.2). (B) Expression of target genes upon HIGS. The relative expression of *P. xanthii* transcripts *PxCDA1* and *PxCDA2*, and the melon chitin receptor gene *CmCERK1*, was analyzed 24 h after pathogen inoculation. Relative transcription levels of fungal and plant transcripts were normalized to the transcription of the endogenous control genes *P. xanthii* *PxTUB2* (KC333362) and melon *CmACT7*, respectively. Bars indicate the means  $\pm$  standard errors of three technical replicates from three different samples, each from five pooled cotyledons.

**Figure S2.** Representative images of leaf disc assays. Melon cotyledon discs were treated with the different compounds and inoculated with *P. xanthii* as described in Material and Methods. (A) Disease-suppressing effect of carboxylic acids against cucurbit powdery mildew. (B) Non-disease suppressing effect of other chelating agents.