Public Abstract

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Title:Downstream chitin signaling mediated by CERK1 in Arabidopsis

Chitin, an important component of the fungal cell wall, is one of the best studied pathogen-associated molecular patterns (PAMPs) and is capable of eliciting basal defense responses against fungal pathogens. Recently, the Arabidopsis receptor for chitin was identified, which is LysM-containing receptor-like kinase 1 (CERK1). To gain an insight into chitin-elicited defense responses, we generated screened an Arabidopsis mutation population for mutants that were defective in their chitin response. We also conducted a study of CERK1 interactors. A total of seven mutants were identified that were shown a defective chitin response. From the CERK1 interactor study, we also identified a CERK1 interactor that showed an alteration in defense responses to both bacterial and fungal pathogens. Given the high impact of fungal diseases in agriculture, this study will contribute to our understanding of chitin-elicited defense responses and to further studies of fungal diseases in crop plants.