

*Broad-Spectrum Resistance 1 (BSR1)* encodes a rice receptor-like cytoplasmic kinase, and enhances disease resistance when overexpressed. Rice plants overexpressing *BSR1* are highly resistant to diverse pathogens, including rice blast fungus. However, the mechanism responsible for this resistance has not been fully characterized. To analyze the *BSR1* function, *BSR1*-knockout (*BSR1*-KO) plants were generated using a clustered regularly interspaced short palindromic repeat (CRISPR)/CRISPR-associated protein 9 (Cas9) system. Experiments using suspension-cultured cells revealed that defense responses including  $H_2O_2$  production (i.e. oxidative burst) and expression of defense-related genes induced by autoclaved conidia of the rice blast fungus significantly decreased in *BSR1*-KO cells. Furthermore, a treatment with chitin oligomers which function as microbe-associated molecular patterns (MAMPs) of the rice blast fungus resulted in considerably suppressed defense responses in *BSR1*-KO cells. These results suggest that BSR1 is important for the rice innate immunity triggered by the perception of chitin.

The rice defense responses triggered by chitin perception are mediated by the receptor-like cytoplasmic kinase BSR1.

