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Participation of hydrogen peroxide in elicitor-responsive photon emission from rice cells.

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ABSTRACT

Biophoton emissions from suspension-cultured rice cells were elevated after treatment with *N*-acetylchitohexaose. We examined whether this elicitor-responsive photon emission was correlated with the generation of reactive oxygen species. The strength of elicitor-responsive photon emissions from cells agreed with the amounts of hydrogen peroxide in cell-cultured medium in a time-course study. Superoxide dismutase treatment did not affect the elicitor-responsive photon emissions, whereas catalase treatment suppressed the emission to 62% of the photon emission from cells in the medium without the enzymes. These results suggest that hydrogen peroxide partially contributes elicitor-responsive photon emissions.

Key words: biophoton, hydrogen peroxide, *N*-acetylchitohexaose, rice cell, reactive oxygen species, catalase, superoxide dismutase

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