The effect of methyl jasmonate on harpin-induced hypersensitive reaction in tobacco plant

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Abstrak

The hypersensitive reaction (HR) jn plants is a plant defense system against pathogen attack. HR is characterized by the rapid death of infected cells accompanying the formation of necrotic lessions in which pathogens are thought to be enclosed. Following the early signaling events activated by pathogen attack, the elicitor signals are often amplified through the generation of secondary signal molecules such as salicylic acid (SA) and Jasmonate acid (JA). Some studies have shown thai SA- and JA-signaling pathways are interconnected in complicated ways and it is still not clear how defense response is modulated by SA and JA. To understand better the involvement of JA. the action of MeJA on harpin-induced HR was investigated by using tobacco plant (wildtype and transgenic carrying a chimeric gene of PSPAL2 promoter and GUS gene. Leaves of of tobacco were infiltrated with harpin and MeJA. The results from HR assay and GUS histochemical staining showed that induction of HR by harpin (250 ug/ml) seems to be modulated by 100 uM MeJA. These results suggest that exogenenously application of MeJA will affect the endogenous concentration in plant that will become a switching point for MeJA to lead the potentiation or suppression of defense response.