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Regulation mechanisms of systemic acquired resistance induced by plant activators

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Abstract:

Systemic acquired resistance (SAR) is a plant defense system against a broad range of pathogens and is induced through the salicylic acid (SA)-mediated pathway. We investigated the mode of action of SAR-inducible chemicals, *N*-cyanomethyl-2-chloroisonicotinamide (NCI), 3-chloro-1-methyl-1*H*-pyrazole-5-carboxylic acid (CMPA), and *N*-(3-chloro-4-methylphenyl)-4-methyl-1,2,3-thiadiazole-5-carboxamide (tiadinil, TDL), by analyzing disease resistance and the expression of SAR marker genes in tobacco and *Arabidopsis*. NCI, CMPA, TDL and its active metabolite 4-methyl-1,2,3-thiadiazole-5-carboxylic acid (SV-03) induced SAR by activating the site between SA accumulation and NPR1 in the SAR signaling pathway.

Keywords:

systemic acquired resistance, *Arabidopsis thaliana*, tobacco, plant activator, *PR* genes

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