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AN INTERACTION NETWORK MEDIATED BY THE OLIGOGALACTURONIDE RECEPTOR WAK1 REGULATES ARABIDOPSIS LOCAL RESPONSE TO WOUNDING

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Damage-associated molecular patterns (DAMPs), wall associated kinase 1, glycine rich-protein 3, kinase-associated protein phosphatase, *immunity*

An efficient sensing of danger and a rapid activation of the immune system are crucial for the survival of plants. Conserved pathogen/microbe-associated molecular patterns (PAMPs/MAMPs) and endogenous molecular patterns, which are present only when the tissue is infected or damaged (damage-associated molecular patterns or DAMPs), can act as danger signals and activate the plant immune response. These molecules are recognized by surface receptors that are indicated as pattern recognition receptors (PRRs). Oligogalacturonides (OGs), released from the plant cell wall, are well-known DAMPs that have long been considered as signals in the wound response. Since they are negatively charged and have a limited mobility, their activity as a wound signal is likely to be restricted to the areas that are close to the damaged or wounded tissue. Recently, through a chimeric receptor approach, we have demonstrated that the Arabidopsis Wall-Associated Kinase 1 (WAK1) is a receptor of OGs. WAK1 has been described to form a complex with an apoplastic glycine-rich protein (GRP3) and a cytoplasmatic kinase-associated protein phosphatase (KAPP). Using Arabidopsis plants overexpressing WAK1 and *grp3* and *kapp* null insertional mutants, we have investigated the role of the three proteins in the perception/transduction of the OG signal and in the regulation of the wound response.