



林业专业知识服务系统
Forestry Knowledge Service System

同义词
 上位词
 下位词
 二次检索
 重新检索

[首页](#)
[资源导航](#)
[知识应用](#)
[林业专题](#)
[获奖成果](#)
[统计数据](#)
[林草标准](#)
[专家学术圈](#)
[知识图谱](#)

数据来源: [林业专题资讯](#)
[打印](#)
[下载](#)
A⁺ A⁻
[分享](#)

Jasmonic acid and salicylic acid modulate systemic reactive oxygen species signaling during stress responses

编号	040038601
推送时间	20230313
研究领域	森林培育
年份	2022
类型	期刊
语种	英语
标题	Jasmonic acid and salicylic acid modulate systemic reactive oxygen species signaling during stress responses
来源期刊	Plant Physiology
期	第386期
发表时间	20221129
关键词	long-distance ; arabidopsis ; acclimation ; combination ; ethylene ; light ; npr1 ;
摘要	Plants can send long-distance cell-to-cell signals from a single tissue subjected to stress to the entire plant. This ability is termed “systemic signaling” and is essential for plant acclimation to stress and/or defense against pathogens. Several signaling mechanisms are associated with systemic signaling, including the reactive oxygen species (ROS) wave, calcium wave, hydraulic wave, and electric signals. The ROS wave coordinates multiple physiological, molecular, and metabolic responses among different parts of the plant and is essential for systemic acquired acclimation (SAA) to stress. In addition, it is linked with several plant hormones, including jasmonic acid (JA), salicylic acid (SA), and abscisic acid (ABA). However, how these plant hormones modulate the ROS wave and whether they are required for SAA is not clear. Here we report that SA and JA play antagonistic roles in modulating the ROS wave in Arabidopsis (<i>Arabidopsis thaliana</i>). While SA augments the ROS wave, JA suppresses it during responses to local wounding or high light (HL) stress treatments. We further show that ethylene and ABA are essential for regulation of the ROS wave during systemic responses to local wounding treatment. Interestingly, we found that the redox-response protein NONEXPRESSOR OF PATHOGENESIS RELATED PROTEIN 1 is required for systemic ROS accumulation in response to wounding or HL stress, as well as for SAA to HL stress. Taken together, our findings suggest that interplay between JA and SA might regulate systemic signaling and SAA during responses of plants to abiotic stress or wounding.
服务人员	孙小满
服务院士	尹伟伦
PDF文件	浏览全文

相关记录

[更多 >](#)

- ACC deaminase-producing endophytic fungal consortia promotes drought stress ... 2023-01-30
- Towards a hierarchical gene regulatory network underlying somatic embryogenesis 2022-12-19
- Spatial and temporal regulation of parent-of-origin allelic expression in the endos... 2023-03-06
- Phenological physiology: seasonal patterns of plant stress tolerance in a changing... 2022-12-26
- Carbon Allocation of *Quercus mongolica* Fisch. ex Ledeb. across Different Life Sta... 2022-12-12
- The retrograde signaling regulator ANAC017 recruits the MKK9–MPK3/6, ethylen... 2022-10-03

相关图谱



相关主题

拟南芥 [复制重组](#)
[脱氧核糖核酸重组](#) [体细胞重组](#)
[组合育种](#) [加性重组](#) [平压制](#)
[重组值](#) [水平组合](#) [同源重组](#)

相关论文

- Effects of soil moisture and light in...
- 栓皮栎体胚诱导关键影响因素研究



相关链接: [中国工程院](#) [国家林业和草原局](#) [中国林业科学研究院](#) [中国林业信息网](#) [中国林业数字图书馆](#) [国家林业和草原科学数据中心](#)

友情链接: [自然资源部](#) [科学技术部](#) [中国林学会](#) [中国科技资源共享网](#) [中国林草植物新品种保护](#) [中国林业知识产权网](#) [中国林业新闻网](#)

主办单位: [中国林业科学研究院林业科技信息研究所](#) 电话: 010-62889748 E-mail: wangjiaosky92@163.com 京ICP备14021735号-2 访问量: 12466482

建议使用谷歌、火狐、360、IE8或IE8以上版本的浏览器