

## Sample of Abstract

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# Phytohormone Interaction between Salicylic Acid and Abscisic Acid in Various Plants

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## BACKGROUND

Crop yields in the world are affected by environmental factors including both biotic and abiotic. Under field conditions, plants are often exposed to multiple stress factors at the same time. Therefore, plants have evolved unique hormonally regulated self-protection systems to survive under the changing environmental condition. Salicylic acid (SA) associates with defense response to biotrophic pathogens, and abscisic acid (ABA) plays important roles in both plant development and adaptation to abiotic stresses, such as drought, salinity, etc. However, in the general theory, it is thought that SA and ABA have an antagonistic interaction each other reside in crosstalk. So, we studied the interaction of these phytohormones in various plants aiming to contribute to molecular breeding.

## METHOD

We prepared and cultivated seven kinds of plants: wheat, barley, rice, bean, tomato, broccoli and Arabidopsis. After they grew up appropriate size, they were subjected to drought-stress, SA treatment (1mM) and ABA treatment (5μM), and then we harvested them after the appropriate treatment time. We analyzed the endogenous SA and ABA levels by LC-MS/MS.

## RESULTS

As a result, our research indicates that antagonistic interaction between SA and ABA is appeared in rice, bean, tomato and broccoli, whereas the interaction is not appeared in wheat, barley and Arabidopsis.

## CONCLUSION

Our data indicates that the interaction between SA and ABA varies among plant species. That is, we anticipate that there is a new signal network for crosstalk in phytohormone interaction. Further progress of our findings will be contributed to not only molecular breeding of various crops, but also stable crop production in the world. Therefore, our research will be able to contribute to not only SDG2: Zero Hunger, but also SDG3: Good Health and Well-being, SDG10: Reduced Inequalities and SDG13: Climate Action.

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