

Insect galls are abnormal plant tissues induced by parasitic insect(s) for use as their habitat. In previous work, we suggested that gall tissues induced by the aphid *Tetraneura nigriabdominalis* on Japanese elm trees are less responsive than leaf tissues to jasmonic acid (JA), which is involved in the production of volatile organic compounds as a typical defensive reaction of plants against attack by insect pests. A comprehensive analysis of gene expression by RNA sequencing indicated that the number of JA responsive genes was markedly lower in gall tissues than in leaf tissues. This suggests that gall tissues are mostly defective in JA signaling, although JA signaling is not entirely compromised in gall tissue. Gene ontology analysis sheds light on some stress-related unigenes with higher expression levels in gall tissues, suggesting that host plants sense aphids as a biotic stress but are defective in the JA-mediated defense response in gall tissues.

The aphid-induced gall tissues on Japanese elm trees are less responsive than leaf tissues to jasmonic acid, which may provide the aphid with beneficial environments.

