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Differential transcriptome modulation leads to variation in arsenic stress response in *Arabidopsis thaliana* accessions

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Highlights

- Response of *Arabidopsis* accessions studied under As(V) stress
- Col-0 and Slavi-1 are the most tolerant and sensitive accessions respectively
- Differential transcriptome modulation observed in contrasting accessions
- As(V) induced genes are associated with detoxification pathways and stress response
- Differentially expressed genes regulate As(V) stress response in natural variation

Abstract

Arsenic (As) is a ubiquitous metalloid and a health hazard to millions of people worldwide. The presence of As in groundwater poses a threat as it not only affects crop productivity but also contaminates food chain. Therefore, it is essential to understand molecular mechanisms underlying uptake, transport and accumulation of As in plants. In recent past, natural variation in *Arabidopsis thaliana* has been utilized to understand molecular and genetic adaptation under

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