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Title:	Characterization of Iron-deficiency responsive gene IRG1 in Arabidopsis thaliana
Authors:	Sahu, Divyanshu (/jspui/browse?type=author&value=Sahu%2C+Divyanshu)
Keywords:	Arabidopsis thaliana
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Abstract:	<p>Iron is an essential micronutrient for plants, and its deficiency can cause problems both for plants and humans, as plants are a significant source of our iron. Excess iron is also toxic for plants as it releases large quantities of Reactive Oxygen Species, which results in cell damage. A considerable portion of the world's soil is iron deficient. Therefore, plants need to crank up their molecular machinery to uptake more iron from the soil and respond to this iron deficiency stress. Though much research has transpired in understanding the molecular mechanisms underlying iron deficiency stress response, knowledge gaps remain. In this work, we aspired to decipher the molecular function and biological process, therefore functionally characterizing the gene IRG1. Our work tries to fill the knowledge gaps in the molecular pathway of iron homeostasis in Arabidopsis thaliana. Our study shows that the gene is induced under iron deficiency and might lead to the elongation of the primary roots to salvage more iron from the soil. The iron uptake machinery is perturbed when we knock down the gene. IRG1 also interacts with three crucial genes involved in the iron homeostasis pathway.</p>
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