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## Novel genetic screen for iron homeostasis in Arabidopsis

Very little is known about the molecular genetics of iron homeostasis in plants. Using the model organism Arabidopsis, our objective is to identify additional genes involved in iron homeostasis using a novel genetic screen. Our aim is to isolate mutants that over-accumulate iron relative to wild-type plants. Ferritin 1 (FER1) mRNA and protein levels are upregulated by intracellular iron concentrations in leaves. Using transgenic lines expressing green fluorescence protein (GFP) driven by the FER1 promoter, we were able to non-invasively and indirectly measure iron concentrations in leaves. Plants over-accumulating iron in their leaves would express high levels of GFP fluorescence relative to the non-mutagenized transgenic control. We examined fluorescence of 43,000 mutated transgenic lines on iron-sufficient media at 10 days after germination, which resulted in the identification of six putative mutants with high GFP fluorescence relative to non-mutagenized transgenic controls. Further genetic and physiological characterization of these lines is ongoing. From our screen, we expect to identify genes that are responsible for cellular iron transport, synthesis of iron chelators and molecules for iron sensing and signaling, and regulatory components for ferritin expression. The identification of genes resulting from our screen will enhance our knowledge on the molecular biology of iron homeostasis in plants.