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## THE REGULATION OF SEED GERMINATION BY INDETERMINATE DOMAIN TRANSCRIPTION FACTORS

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**S**eed germination is a crucial process in the life cycle of plants and the control of the timing of germination is important not only for plants but also for agriculture. Plant growth depends on several environmental conditions, such as light, moisture, nutrients, temperature, and so on. Therefore, seeds have to monitor the environmental condition to germinate at proper timing. Previous studies have shown that germination is regulated by these environmental conditions and many components, including plant hormones, such as Gibberellins (GA) and Absciscic Acid (ABA) and have identified several genes involved in the regulation of seed germination. We found that several INDETERMINATE DOMAIN (IDD) family transcription factors in *Arabidopsis* expressed in seeds are involved in the regulation of seed germination. The IDD family transcription factor was first identified as a regulator of maize flowering and recent studies show that some IDD transcription factors play important roles in GA signaling pathway, root patterning and gravitropism. Here, we present the results about *IDD4*

gene. The T-DNA tag line of *IDD4* gene (*idd4*) showed delayed germination compared to Wild Type (WT) and the addition of 1 M ABA further delayed the germination of *idd4*. These results indicated that *IDD4* gene promotes germination and suppress the sensitivity to ABA. In contrast, 50% of *idd4* seeds germinated in the dark while WT seeds did not germinate. The result indicated that *IDD4* gene inhibits germination in the dark. We analyzed the expression of gene involved in the synthesis, catabolism and signaling of GA and ABA, and germination regulation. In this presentation.

### Biography

Akiko Kozaki has studied the function of indeterminate domain family proteins, which are plant specific group of transcription factors. She is also interested in the TOR signaling pathway in plants and the regulation of oil synthesis in plants.

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