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The function of the fork-head-associated domain in *Arabidopsis thaliana*

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Protein-Protein interactions are one of the elements of regulating signaling and cellular processes. These interactions are mediated between interaction domains and target motifs. The interaction domains bind specific target motifs from proteins so that protein binding is controlled and does not happen randomly. One of the target motifs is a phosphorylated protein. Several phosphobinding domains have been identified to bind phosphorylated tyrosine, threonine, and/or serine. One of these domains is the fork-head-associated domain (FHA). The FHA domain is a phosphothreonine binding domain and has been found in proteins that are involved in DNA repair, cell cycle control and cell proliferation. In *Arabidopsis thaliana*, FHA domains have been identified in 16 genes including KAPP, ABA1, DDL and AtNBS1. My objective is to identify the function of other genes that encode a protein with a FHA domain. The function of these genes will be deduced from the phenotype of the homozygote mutants of these genes. I focus my research on one gene, AT5g07400. Besides the FHA domain both AT5g07400 and its animal orthologous gene have a tyrosyl-DNA phosphodiesterase domain, which is involved in DNA repair. I have isolated two independent homozygous mutants in AT5g07400 and am screening for phenotypes.