Aspergillus aculeatus T-DNA insertion mutants harboring a transcriptional fusion between the FIII-avicelase gene (*cbhI*) promoter and the orotidine 5′-monophosphate decarboxylase gene. Analysis of 5-fluoroorodic acid (5-FOA) sensitivity, cellulose utilization, and *cbhI* expression of the mutants revealed that a mutant harboring T-DNA at the dipeptidyl peptidase IV (*dppIV*) locus had acquired 5-FOA resistance and was deficient in cellulose utilization and *cbhI* expression. The deletion of *dppIV* resulted in a significant reduction in the cellulose-responsive expression of both *cbhI* as well as genes controlled by XlnR-independent and XlnR-dependent signaling pathways at an early phase in *A. aculeatus*. In contrast, the *dppIV* deletion did not affect the xylose-responsive expression of genes under the control of XlnR. These results demonstrate that DppIV participates in cellulose-responsive induction in *A. aculeatus*.

Dashed lines with arrows indicate putative signaling pathways.