COVER SHEET

TITLE: Genetic studies of the *velC* gene required for proper sexual development in *Aspergillus nidulans*

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YEAR: 2010

ABSTRACT

VelC is required for the proper fungal development in *Aspergillus nidulans*

Velvet proteins, VeA, VosA, VelB, and VelC, are a new protein family in many filamentous fungi. They regulate fungal development and secondary metabolites in filamentous fungi and are also speculated to be a new class of the fungus specific transcription factor.

Among *velvet* proteins, VelC (VeA like protein C) is the newly found protein and is not characterized yet. To test the hypothesis that VelC regulates the fungal development in *A. nidulans*, we generated deletion *velC* strain (Δ*velC*), and overexpression *velC* strains (OE*velC*). We also studied the phenotypes of wild type (WT), Δ*velC*, and OE*velC*. In both light and dark conditions, sexual development was repressed and asexual development was enhanced in Δ*velC*. Levels of *brlA*, *abaA,* and *wetA* mRNA expression in asexual developmental stage are higher in Δ*velC* strain. OE*velC* strains resulted in highly increased number of cleistothecia (sexual structure) and less number of conidia (asexual spores). From the study of Δ*velC* and OE*velC*, we concluded that *velC* functions as the positive regulator of sexual development.

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