

F330 Cellular Function of the gene encoding G α -protein homolog in the development of *Aspergillus nidulans*

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In order to identify α -subunit of heterotrimeric G protein involved in growth and development in *Aspergillus nidulans*, we have tried to isolated G α protein homolog from *A. nidulans*. We already obtained *ganA* encoding G α subunit whose function was yet uncharacterized in development in *A. nidulans*. Another G α gene, *ganB* was isolated from a genomic library of *A. nidulans*. Sequence analysis of *ganB* clone and its cDNA showed that *ganB* encoded 356 amino acids having potential myristoylation site at the N-terminal and included six introns in ORF and 5'-UTR. *GanB* is closely related to other fungal G proteins that implicated to positively influence the internal cAMP level. Disruption of *ganB* resulted in inhibition of asexual sporulation of *A. nidulans* and it suggested the possibility that GanBp might participate in positive regulation of asexual development.

F331 Isolation of two genes encoding mitogen-activated protein kinase homologs *mpkB* and *mpkC*, from *Aspergillus nidulans*

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Mitogen-activated protein kinases (MAPKs) play an important role in regulation of diverse cellular functions such as growth, differentiation, osmoregulation and cell wall biosynthesis in fungi. Two genes encoding mitogen-activated protein kinase homologs, *mpkB* and *mpkC*, were isolated from *Aspergillus nidulans* by PCR with degenerated primers and colony hybridization. Each nucleotide sequence of *mpkB* and *mpkC* consisted of presumptive ORF containing 457 and 347 amino acids and 3 and 6 introns, respectively. The amino acid sequence of MpkBp showed 84% of identities to the gene *pmk1* which is involved in differentiation and pathogenicity in *Magnaporthe grisea* suggesting that the gene *mpkB* might play some roles in development in *A. nidulans*. However the amino acid sequence of MpkCp showed 66% of identities to the gene *HOG1*, which was known to regulate the osmostress in yeast, implying that the gene *mpkC* might be a member of stress-activated protein kinases (SAPK).