

Nutrients and Culture pH Affect the Transcription of *pacC* Gene in *Aspergillus nidulans*

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The regulation of gene expression by pH in the filamentous fungus *Aspergillus nidulans* involves the conserved PacC signal transduction pathway that mediates many metabolic events. The *pacC* gene, which codes for a Zn-finger transcription factor, and the six *pal* genes (*palA*, *B*, *C*, *F*, *H* and *I*) are putative members of a signaling cascade that senses alkalinity and promotes the proteolytic activation of PacC. Loss-of-function mutations in any of the *pal* genes shall lead to a wild-type acidic growth phenotype, presuming that PacC and Pal proteins are not functional at acidic pH. In the present study, several culture conditions were used to characterize the response to ambient pH in the *pabaA1* and *pabaA1 palB7* strains of *A. nidulans*. Northern blot RT-PCR analyses revealed that transcription of *pacC* gene occurs in both acid and alkaline growth conditions. We observed that transcription of *pacC* is optimal at pH 5.0 in low-Pi minimal medium supplemented with glucose as the sole carbon source. However, transcription of *pacC* was not observed at pH 5.0 in cultures supplemented with Yeast Extract (YAG) as the sole phosphorus source. Taken together, these results indicate that transcription of *pacC* in acidic cultures is dependent on the composition of the culture medium. Financial support: FAPESP, CNPq, CAPES and FAEPA