

IDENTIFICATION OF NEW *NEUROSPORA CRASSA* GENES UNDER REGULATION OF THE TRANSCRIPTION FACTOR NUC-1 IN RESPONSE TO Pi STARVATION

Leal, J¹., Squina, F.M.², Freitas, J.S²., Silva, E.M², Silveira, H.C.S¹, Gras, D.E.¹, Sanches, P.R¹., Martinez-Rossi, N.M¹., Rossi, A²

¹Departamento de Genética, FMRP-USP.

²Departamento de Bioquímica e Imunologia, FMRP-USP, Ribeirão Preto.

Changes in environmental factors such as availability nutrients and pH trigger temporary modifications in patterns of gene expression. Under the action of regulatory genes *nuc-2*, *preg*, *pgov* and *nuc-1*, *Neurospora crassa* synthesizes a number of phosphatases to scavenge Pi from the environment in response to signals of Pi starvation. Under limiting Pi, NUC-2 inhibits the action of PREG/PGOV complex, allowing the translocation of the transcription factor NUC-1 into the nucleus, and consequently, the expression of phosphatases. Here we identify genes differentially expressed in *nuc-1^{RIP}* mutant, we employed suppression subtractive hybridization (SSH) between RNA isolated from the 74A and *nuc-1^{RIP}* mutant strains of *N. crassa* grown in low Pi, pH 8.0. The expression of cDNAs clones was analyzed using macro-arrays dot-blot. Two-hundred transcripts differentially expressed in the *nuc-1^{RIP}* mutant were sequenced and 31 unigenes were identified, with 29 codifying for putative proteins involved in diverse cellular processes. Some transcripts were confirmed by Northern Blot, as those that encode the HEX-1 (NCU08332.3) and NMT-1 (NCU09345.3) proteins, which were respectively up and down regulated in the *nuc-1^{RIP}* mutant. Our results show that in addition to its role in phosphate acquisition, the *nuc-1* gene is involved in the regulation of other metabolic processes.

Key words: *Neurospora crassa*, SSH, Pi regulation, NUC-1
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