The pcz1 gene, which encodes a Zn(II)$_2$Cys$_6$ protein, is involved in the control of growth, conidiation, and conidial germination in the filamentous fungus Penicillium roqueforti

Gil-Durán, Carlos
Rojas-Aedo, Juan F.
Medina, Exequiel
Vaca, Inmaculada
García-Rico, Ramón O.
Villagrán, Sebastián
Levicán, Gloria
Chávez, Renato

© 2015 Gil-Durán et al. (RC) Proteins containing Zn(II)$_2$Cys$_6$ domains are exclusively found in fungi and yeasts. Genes encoding this class of proteins are broadly distributed in fungi, but few of them have been functionally characterized. In this work, we have characterized a gene from the filamentous fungus Penicillium roqueforti that encodes a Zn(II)$_2$Cys$_6$ protein, whose function to date remains unknown. We have named this gene pcz1. We showed that the expression of pcz1 is negatively regulated in a P. roqueforti strain containing a dominant active G?i protein, suggesting that pcz1 encodes a downstream effector that is negatively controlled by G?i. More interestingly, the silencing of pcz1 in P. roqueforti using RNAi-silencing technology resulted in decreased apical growth, the promotion of conidial germination (even in the absence of a carbon source), and the strong repression of conidiation, concomitant with the downregulation of the genes