

Molecular characterization of the *Aspergillus fumigatus* NCS-1 homologue, NcsA.

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Abstract

Here, we characterize the *Aspergillus fumigatus* homologue ncsA Neuronal Calcium Sensor. We showed that ncsA is not an essential gene and ncsA growth was decreased in the presence of EGTA and SDS. Furthermore, the ncsA mutant is more resistant to calcium chloride. NcsA:mRFP localizes to the cytoplasm and its cellular localization is not affected by the cellular response to either calcium chloride or EGTA. The ncsA mutant strain is more sensitive to voriconazole, itraconazole, and amphotericin. Polar growth in the DeltancsA mutant was also considerably more affected by lovastatin than in the wild type strain. The Spitzenkörper can be visualized in both strains and although the vacuolar system does not seem to be very different, there is an increase in the staining intensity on the germling surface of the ncsA strain. NcsA promotes pmcA and pmcB expression and therefore there is a reduced expression of these ion pumps in the DeltancsA mutant background, and also of other genes involved in the response to calcium in *A. fumigatus*. The ncsA inactivation mutation is not causing loss of virulence in a low dose murine infection when compared to the corresponding wild type strain.

Involved units

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