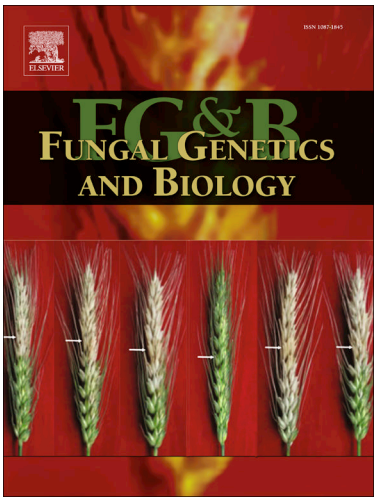

Regular Articles

The making of a mushroom: Mitosis, nuclear migration and the actin network

Elke-Martina Jung, Erika Kothe, Marjatta Raudaskoski

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The making of a mushroom: Mitosis, nuclear migration and the actin network

Elke-Martina Jung[1], Erika Kothe[1], Marjatta Raudaskoski[2]

[1] Friedrich Schiller University, Institute of Microbiology, Neugasse 25, 07743 Jena, Germany, erika.kothe@uni-jena.de, elke-martina.jung@uni-jena.de

[2] Molecular Plant Biology, Department of Biochemistry, University of Turku, FI-20014 Turku, Finland, marrau@utu.fi

* Correspondence: Prof. Dr. Erika Kothe, Friedrich Schiller University, Institute of Microbiology, Neugasse 25, 07743 Jena, Germany; Tel: +49 3641 949291, Fax: +49 3641 949292, Email: erika.kothe@uni-jena.de; www.mikrobio.uni-jena.de

Abstract

Basidiomycetes feature a prolonged dikaryotic life stage. A dispute over open *versus* closed mitosis could be solved using *in vivo* fluorescence videomicroscopy of histone 2B::EGFP and Lifeact labeled *Schizophyllum commune*. It revealed nuclei to condense to approximately one fifth in diameter during mitotic prophase. In addition, the specifics of clamp cell formation typical of many basidiomycetes included an actin network at the future site of nuclear division, which allowed for cessation of nuclear movement and re-localization of one nucleus towards the emerging clamp cell, while the other divided along the hyphal axis. Subsequent fusion of the clamp cell to form the clamp connection restored the close association of the two nuclei in a very fast process after clamp fusion. Septation was preceded by actin patches and vesicles involved in formation of the actin ring.

Keywords

Basidiomycetes, *Schizophyllum commune*, mitosis, actin, nuclear division, septation.