

Accumulation of mutations in experimental evolution of basidiomycete fungus *Schizophyllum commune*

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Basidiomycete fungus *Schizophyllum commune* is a unique organism with the highest genetic diversity among studied species, and a high mutation rate of $2.0 \cdot 10^{-8}$ substitutions per nucleotide per generation [1]. The life cycle of *S. commune* includes a mononuclear haploid stage called monospore culture, which originates from a single spore and can be cultivated on solid medium. This makes *S. commune* a promising object to study the mutation process during vegetative growth of the fungus. We designed an experiment which allows us to

cultivate monospore cultures of *S. commune* in long tubes with fixed diameter of the section for long period of time. We have been cultivating two lines started from one monospore culture in very thin tubes, insuring small population sizes, for about a year, and collected three samples of the mycelium from each line – after about 15, 30 and 45 cm of growth, which corresponds to ~2000, 4000 and 6000 cell divisions. Sequencing of these samples revealed a provisional high rate of accumulation of mutations during vegetative growth, although variation is maintained even at such low population sizes.

1. Baranova A et al. (2015) Extraordinary Genetic Diversity in a Wood Decay Mushroom. *Mol. Biol. Evol.* 32(10):2775–2783 doi:10.1093/molbev/msv153.