

Serial passaging of *Candida albicans* in systemic murine infection suggests that the wild type strain SC5314 is well adapted to the murine kidney.

Lüttich A, Brunke S, Hube B, Jacobsen ID (2013) Serial passaging of *Candida albicans* in systemic murine infection suggests that the wild type strain SC5314 is well adapted to the murine kidney. *PLOS One* 8(5), e64482.

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Abstract

The opportunistic fungal pathogen *Candida albicans* has a remarkable ability to adapt to unfavorable environments by different mechanisms, including microevolution. For example, a previous study has shown that passaging through the murine spleen can cause new phenotypic characteristics. Since the murine kidney is the main target organ in murine *Candida* sepsis and infection of the spleen differs from the kidney in several aspects, we tested whether *C. albicans* SC5314 could evolve to further adapt to infection and persistence within the kidney. Therefore, we performed a long-term serial passage experiment through the murine kidney of using a low infectious dose. We found that the overall virulence of the commonly used wild type strain SC5314 did not change after eight passages and that the isolated pools showed only very moderate changes of phenotypic traits on the population level. Nevertheless, the last passage showed a

higher phenotypic variability and a few individual strains exhibited phenotypic alterations suggesting that microevolution has occurred. However, the majority of the tested single strains were phenotypically indistinguishable from SC5314. Thus, our findings indicate that characteristics of SC5314 which are important to establish and maintain kidney infection over a prolonged time are already well developed.

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doi: 10.1371/journal.pone.0064482

PMID: 23737985