

Antibiotics create a shift from mutualism to competition in human gut communities with a longer-lasting impact on fungi than bacteria.

Seelbinder B, Chen J, Brunke S, Vazquez-Urbe R, Santhaman R, Meyer AC, de Oliveira Lino FS, Chan KF, Loos D, Imamovic L, Tsang CC, Lam RP, Sridhar S, Kang K, Hube B, Woo PC, Sommer MOA, Panagiotou G (2020) Antibiotics create a shift from mutualism to competition in human gut communities with a longer-lasting impact on fungi than bacteria. *Microbiome* 8(1), 133. [PubMed](#)

ILRS Authors

[Daniel Loos](#) [Bastian Seelbinder](#)

Projects

Linking diseases with the human gut microbiome - Biomarker discovery in multi meta-omics data
[Details](#)

From Data to Science: A multi-Omics Analysis of the Pathobiome
[Details](#)

Abstract

Antibiotic treatment has a well-established detrimental effect on the gut bacterial composition, but effects on the fungal community are less clear. Bacteria in the lumen of the gastrointestinal tract may limit fungal colonization and invasion. Antibiotic drugs targeting bacteria are therefore seen as an important risk factor for fungal infections and induced allergies. However, antibiotic effects on gut bacterial-fungal interactions, including disruption and resilience of fungal community compositions, were not investigated in humans. We analysed stool samples collected from 14 healthy human participants over 3 months following a 6-day antibiotic administration. We integrated data from shotgun metagenomics, metatranscriptomics, metabolomics, and fungal ITS2 sequencing.

Identifier

doi: 10.1186/s40168-020-00899-6 PMID: 32919472