SFB 680

MOLECULAR BASIS OF
EVOLUTIONARY INNOVATIONS

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Phylogenomic networks reveal trends and barriers to lateral gene transfer during microbial evolution

Gene acquisition by lateral gene transfer (LGT) is an important mechanism for natural variation among prokaryotes. Laboratory experiments show that protein-coding genes can be laterally transferred extremely fast among microbial cells, inherited to most of their descendants, and adapt to a new regulatory regime within a short time. Recent advance in the phylogenetic analysis of microbial genomes using networks approach reveals a substantial impact of LGT during microbial genome evolution. Phylogenomic networks of LGT among prokaryotes reconstructed from completely sequenced genomes uncover barriers to LGT in multiple levels. Barriers to gene acquisition in nature include physical barriers for gene transfer between cells, genomic barriers for the integration of acquired DNA, and functional barriers for the acquisition of new genes.

November 30, 14:00

Institute for Genetics, Zülpicher Str. 47a, Lecture Hall, Ground Floor

Host: Michael Lässig and Björn Schumacher

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