

Title: Genome dynamics of the *Streptomyces* genus

Keywords: *Streptomyces*, phylogeny, comparative genomics, synteny

Abstract: *Streptomyces* possess a large linear chromosome (6-12 Mb) consisting of a conserved central region flanked by variable arms covering several megabases. In order to study the evolution of the chromosome across evolutionary times, a representative panel of *Streptomyces* strains and species (125) whose chromosomes are completely sequenced and assembled was selected. The pan-genome of the genus was modeled and shown to be open with a core-genome reaching 1,018 genes. The evolution of *Streptomyces* chromosome was analyzed by carrying out pairwise comparisons, and by monitoring indexes measuring the conservation of genes and their synteny along the chromosome. Using the phylogenetic depth offered by the chosen panel, it was possible to infer that the chromosomal arms evolved faster than the central region under the combined effect of rearrangements and the addition of new information from horizontal transfer.