

Big Lessons from Small Genome

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Our laboratory is involved in a program of genome analysis targeting parasitic/pathogenic bacteria with reduced genomes. We believe that the small genomes of these micro-organisms makes it easier to unravel the fundamental concepts governing evolution, the mechanism of host-pathogen relationships, as well as to reach a detailed understanding of metabolic pathways. In the course of these studies, genes of biomedical or fundamental interests are included in a functional /structural genomic pipeline initially built in the context of a collaborative research project with Aventis Pharma [1]. I will give an overview of the lessons learned from the genomes of two parasitic bacteria we recently sequenced [2-5], combined with a comprehensive study of all available bacterial genomes. If I have time, I will also describe some of the spectacular genomic features of Mimivirus, the largest DNA virus identified so far, both in term of physical size (400 nm) and genome complexity (about 1200 genes).

References

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