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1: Acta Microbiol Immunol Hung. 2003;50(4):395-406.

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Molecular microbiology of gut bacteria: genetic diversity and community structure analysis.

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Recently developed molecular biology approaches make possible the detailed genetic, taxonomic and ecological examination of microorganisms from various habitats. Animal gut represents one of the most complex microbial ecosystems with a large degree of microbial biodiversity present. Bacteria inhabiting the gut usually play important roles in metabolic transformations of substrates and sometimes, e.g. in ruminants, they make the basis for an obligate symbiosis with the host. Here we discuss molecular microbiology as a strategy for examination of gut bacteria, concentrating on a typical and in such environment dominant group of strictly anaerobic Gram-negative bacteria from the phylogenetic group Cytophaga/Flexibacter/Bacteroides. The bacteria from the genus Prevotella are the most abundant Gram-negative bacteria in the rumen and form a distinctive phylogenetic cluster, clearly separated from prevotellas isolated from other ecological niches. They may represent a good choice for a model organism in genetic manipulation experiments and for studies of gene transfer mechanisms taking place in the gut. The molecular tools for detection and monitoring of ruminal prevotellas are discussed.

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