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Prevotella jejuni: Anaerobic Gram-negative bacterium associated to celiac disease

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Prevotella sp., are strictly anaerobic Gram-negative rods constitutes a substantial part of the normal human microflora. About 50 species have been described at present, of which a great part are of oral and upper airways origin, while others have been isolated from the gastrointestinal and urogenital tract and some species origin from animal sources. *Prevotella* sp., often occurs in opportunistic infections and dysbiosis-associated diseases but may also be involved in severe infections and various virulence factors have been demonstrated. The new species *Prevotella jejuni* was discovered from a biopsy taken from the small intestine of a child with celiac disease. Three different strains of the species were isolated and phylogenetic analysis based on 16S rRNA gene sequence analysis revealed a close relationship between them. When grown on blood agar plates the three *P. jejuni* strains were pigmented and weakly or strongly hemolytic. They were able to form saccharolytic and proteolytic enzymes and by flow cytometry they were shown to bind to human intestinal carcinoma cell-lines in suspension. Scanning electron microscopy (SEM) and transmission electron microscopy (TEM) displayed formation of aggregates in which tube-like structures were connecting between individual cells and outer membrane vesicles (OMVs) could also be observed. *Prevotella* sp., are in general considered to be susceptible to bile but in the case of *P. jejuni* the growth was stimulated by sub-inhibitory concentrations of bile, suggesting an adaption to the hostile milieu of the small intestine. The strains have been subjected to whole genome sequencing (WGS) using 454-pyro-sequencing technology.

Biography

Maria Hedberg has completed her PhD in 1995 and Postdoctoral studies at the Karolinska Institute, Stockholm, Sweden. From 2005 she has been working as a Researcher at Umea University, Sweden. Her main research interests are anaerobic bacteria in health and disease and antimicrobial resistance. In 2010 she became an Associate Professor of Experimental Bacteriology at Umea University. She has published more than 50 papers in peer reviewed journals and presently serving as an Editorial Board Member of the journal *Anaerobe*.

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