RESULTS: There have been high pronounced blast-cell transformation regarding to autologous saliva in all patients and the highest level in cancer persons. The mitogenic effect of patients' saliva to heterologous cells in healthy persons has also been pronounced in a control.

Conclusion: At present mitogenic factors in saliva resulting in the proliferative response of lymphocytes aren't quite characterized. Perhaps, the highest levels of such activity might correspond to the most serious disorders of oral local immunity.

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TGEV-specific IgA at different mucosal following infection of pigs with transmissible gastroenteritis virus or the antigendically related porcine respiratory coronavirus


Introduction: The porcine respiratory coronavirus (PRCV) appeared in 1984 in the European swine population and is antigenically closely related to the enteropathogenic coronavirus, transmissible gastroenteritis virus (TGEV). TGEV infects and destroys enterocytes on the small intestinal villi, whereas PRCV infects epithelial cells in the respiratory tract. Both viruses are antigenically similar for the M, the N protein and for the neutralizing cross reacting epitopes of the S protein, but show a difference in the antigenic site of the S protein which stimulates non-neutralizing antibodies. Although they have a different cell tropism, they induce neutralizing antibodies to a similar degree. However, PRCV does induce a partial protection against challenge with TGEV, whereas the reverse could not be demonstrated (1). In order to understand the protection induced by PRCV against TGEV, the presence of TGEV-specific IgA antibodies was determined in blood and different mucosal secretions following infections with PRCV and/or TGEV.

Materials and Methods: Six-week-old TGEV-seronegative piglets were infected intragastrically with 107 PRRSV TGEV strain Miller (n = 4) or by aerosol with 109 TCID50 TGEV strain PRCV (n = 2) and challenged 4 weeks later with 106 TCID50 TGEV strain Miller. Nasal, conjunctival, oral and vaginal swabs, faeces and serum were collected at 0, two and four weeks post infection (WPI) and at 2 and 4 weeks post challenge (WPC). All samples were analysed for the presence of TGEV-specific IgA by ELISA.

Results: Both PRCV infected piglets showed anti-TGEV-IgA in nasal, conjunctival and oral swabs and in serum at 4 WPI, whereas only one pig was positive in her vaginal swabs at 4 WPI. No antibodies could be demonstrated in the faeces. With respect to the TGEV infected piglets, anti-TGEV-IgA were demonstrated in serum at 4 WPI and at 4 WPI in all animals. At 4 WPI, 2 and 1 piglets showed IgA in conjunctival and oral swabs, respectively. No anti-TGEV-IgA were detected in faeces, nasal or vaginal swabs. A homologous challenge of TGEV of both PRCV immunized piglets induced anti-TGEV-IgA in faeces and vaginal swabs at 2 WPC. Four weeks post challenge faecal samples became negative, whereas the other samples remained positive. Homologous challenge of the TGEV immunized piglets induced only anti-TGEV-IgA in serum.

Conclusions: These data confirm previous results which showed that a PRCV infection protects from a subsequent challenge with TGEV, whereas the reverse could not be demonstrated (1). The present results suggest that the PRCV infection also primes mucosa-associated lymphoid tissue at distant mucosae.

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Cytokine gene expression in mucosal T lymphocyte populations

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Introduction: The production of cytokines by cell populations within the gastrointestinal tract is one of the largest immune organs in humans, but as yet little is known of the role cytokines play in maintaining normal gut immune regulation or whether the profile of cytokine production changes in intestinal inflammatory conditions. In this preliminary study, using RT-PCR technology, we have examined IL-2 (Th-1) and/or IL-4 (Th-2) production in human peripheral blood mononuclear cells (PBMC), whole or layered intestinal biopsy cell suspensions and CD3+ lymphocytes isolated from PBM, intestinal epithelium and lamina propria preparations.

Materials and Methods: PBMC production of IL-2 and IL-4 was studied in a time course experiment using either mitogenic or antigenic stimulants. Ribonuclease acid (RNA) was isolated from cells cultured after 0, 8, 12, 24, 48 and 72 hours, reverse transcribed into cDNA and the Polymerase Chain Reaction (PCR) carried out with primers specific for either IL-2 or IL-4. Total RNA was also isolated from 6 whole intestinal biopsies and from 2 cell suspensions of epithelial and lamina propria layers and subsequently analysed for IL-4 mRNA by Northern and Southern blot hybridization, using mouse specific cDNA probes. CD3+ populations were isolated from PBMC, epithelial and lamina propria cell suspensions from 2 further individuals. RT-PCR for IL-2 and IL-4 was performed on oligo dT coated magnetic beads following extraction of RNA with lyso buffer.

Results: In phytohaemagglutinin (PHA) stimulated PBMC IL-2 was detected from 0 to 24 hours and IL-4 was not detected at all time points. In gladin stimulated PBMC IL-2 and IL-4 were detected at all time points. IL-4 was detected in 4 of 6 whole biopsy RNA preparations and in the two separated epithelial and lamina propria layers studied. Finally, in the two patients studied, IL-2 was detected in OKT3 isolated populations from peripheral blood, lamina propria and epithelial layer. In the same individuals IL-4 was not detected in both OKT3 isolated populations from peripheral blood, and from the epithelial layer of one individual and the lamina propria of the other.

Conclusions: This study demonstrates that it is possible to determine cytokine gene expression in magnetic bead-isolated PBMC, IEL and lamina propria CD3+ populations. It also shows that both IELs and lamina propria T (CD3+) cells can manufacture IL-2 and IL-4 which may play specific roles in immune regulation in the human gastrointestinal tract.

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Antigen-presenting properties of gingival fibroblasts in chronic adult periodontitis

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Introduction: Chronic periodontitis is characterized by dense infiltrations of lymphocytes in the connective tissue, which mainly consists of gingival fibroblasts. It is becoming increasingly clear that T lymphocytes and gingival fibroblasts are able to influence each other. For example, the T cell cytokine IFN-γ is able to induce MHC class II molecules on the surface of several cells including gingival fibroblasts. Histological sections of chronically inflamed gingival...