153 Expression of the Cell-Surface Heparan Sulfate Proteoglycan mRNA in Monkey Subungal Gland. E. YAMAGATA, A. KAMADA and T. SAKAKI (Osaka Dental University, Osaka, Japan)

Cell-surface heparan sulfate proteoglycans belong primarily to two families of molecules, syndecans and glypicans, that differ significantly in core protein domain structure. They have been shown to participate in both matrix recognition and growth factor binding and then may participate in cell regulation. Microarray analysis of cell-surface heparan sulfate proteoglycans in adult female monkey (Macaca fascicularis) subungal glands using the RT-PCR technique. Agerase gel electrophoresis of the PCR products of the mRNA generation from RNA was carried out to demonstrate the expression of mRNA in syndecan-1, syndecan-2 and syndecan-4 in this study. In order to compare the mRNA expression level among the cell-surface heparan sulfate proteoglycans, we measured changes in the relative intensity of PCR products with increasing thermal cycle number. The results demonstrated that the expression levels were syndecan-4, syndecan-1 and syndecan-2, glypican in descending order. Hence, it was indicated that the control of the expression patterns of the cell-surface proteoglycans may regulate the cellular function and behavior in the subungal gland.

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154 VAMP2-containing Complex at Secretory Granules in Parotid Acinar Cells. J. YOSHIGAKI*, Y. DOIKE, M. HARA-YOKOYAMA, S. FURUYA, H. SUZUKI and K. YANO (Faculty of Physiol., Nihon Univ. Sch. of Dentistry at Matsumoto, Chiba, Japan)

Amylase release from parotid acinar cells is mainly regulated by accumulation of intracellular cAMP. We previously reported that VAMP-1, one of the SNARE proteins, is specifically increased in the secretory granules of parotid acinar cells and has an essential role in cAMP-regulated amylase secretion. We also found that VAMP-2 makes complex with some unidentified protein(s) at secretory granules in the resting state. In the present study, we investigated whether the VAMP2-containing complex is permeated by VAMP-2 and performed immunoblotting analysis with anti-VAMP-2 antibody. As a result, VAMP2 in solubilized granule membrane was efficiently cleaved by B20. This result suggests that the VAMP2-containing complex is not pre-existing NARE complex. This study was supported in part by a Grant-in-aid for Scientific Research (10771150) from the Ministry of Education, Science and Culture of Japan.

155 The relationship between the acid and alkaline phosphatase activity and the adherence of Candida parapsilosis to human buccal epithelial cells. L. P. SAMARANAYAKE, P. H. F. FERNANDO* and G. J. PANAGODA (Faculty of Dentistry, University of Hong Kong, Hong Kong. University of Peradeniya, Sri Lanka)

Candida parapsilosis is an emerging fungal pathogen implicated in many diseases, especially in compromised host. Candida parapsilosis adhesion and invasion on their initial contact with host surfaces, which in turn depends upon the host and the yeast cell wall components and the related biochemical mechanisms. Therefore we examined the potential pathogenic traits of 24 C. parapsilosis strains, isolated from human sources and determined by examining their adherence to buccal epithelial cells (C. parapsilosis (Samaranayake et al. 1993, Amer. J. Med. Microbiol.1992, 151: 511-517). Significant adherence differences were seen in both the acid and alkaline phosphatase activity as we well as in their adhesion to buccal epithelial cells (p < 0.05). Further research into phosphatase activity of the superficial isolates was significantly greater than 15% (the significance of the isolates was p < 0.035). All acid phosphatase activity was also demonstrated to be higher from acid phosphorylation dependent cells and alkaline phosphatase activity was higher from alkaline phosphorylation dependent cells, described for the first time. Hence it is implied that the acid and alkaline phosphatases of Candida species may play a substantial role in potentiating their virulence.

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156 Oral infection of Candida species in a healthy and immunocompromised animal model. Y. H. SAMARANAYAKE and L. P. SAMARANAYAKE (Oral Bio-sciences, Faculty of Dentistry, University of Hong Kong, Hong Kong)

Little is known of the pathogenic potential of different Candida species in healthy and compromised animal models. Therefore, we investigated the oral colonisation and infection of C. albicans and C. krusei in healthy and immunocompromised Sprague-Dawley rats. A total of 15 rats, were allocated into three groups and were inoculated with C. albicans and C. krusei, and one control group, to determine whether these isolates were colonising the oral cavity. In addition, the impact of the species on the oral environment was quantified. Our results demonstrated the potential for oral colonisation and infection of C. albicans and C. krusei during the period of infection. C. albicans demonstrated a greater potential for oral colonisation and infection when compared with C. krusei, which was more resistant to the oral environment. However, they were able to colonise the oral cavity, and for the duration of the experiment, no severe infections were observed. The study provides evidence that C. albicans and C. krusei have the potential to colonise and infect the oral cavity, and may contribute to the development of oral infections in immunocompromised individuals.

S-1 Biochemical Approach to Synovial Fluid Associated with Temporomandibular Joint Disorders Takanori SHIBATA* and Masao NAGATOMO (Department of Dentistry and Oral Surgery, School of Medicine, Yamagata University, Sendai, Japan)

Recent improvements in techniques for detecting trace amounts of biologic molecules in small volume of synovial fluid have led to analysis on various inflammatory and cartilage degradation markers in the diseased temporomandibular joint (TMJ). The first International Symposium on TMJ Synovial Fluid Tests, which was named "Biochemical Changes in Synovial Fluid Associated with Pathology of the Temporomandibular Joint", was organized by Prof. Dr. Ogata, University of Miami School of Dentistry, in Orlando in 1997. After this symposium, in Japan, a lot of new research groups have grown in this field. They have been focusing and analyzing on various molecules in TMJ synovial fluid, e.g., cAMP, IL and PGE2, COX-1, matrix metalloproteinase and 3 and 3, tissue inhibitor matrix metalloproteinase and 1 and 3 As inflammatory markers, and Chondroitin sulfate, Hyaluronic acid, Keratan sulfate, Procollagen it procollagen peptide and C-propeptide. In this symposium, we focused on the inflammatory markers in the synovial fluid associated with TMJ disorders and discussed their role in the joint pathology. To date, the synovial fluid is considered to be a major source of inflammatory factors, which have a direct effect on the joint structure and function. Therefore, it is important to analyze inflammatory markers in the synovial fluid to understand the pathological condition of the joint and to predict the outcome of treatment. The purpose of this symposium is to report on the current state of knowledge regarding the biochemical changes in the synovial fluid associated with TMJ disorders, to discuss their role in the joint pathology, to provide data regarding the possibility of disease, to assess the advancement of research in this field during the last two years, and to accelerate the advancement of research in this field.

S-2 Clinical Assessment for Joint Effusion of the TMJ K. KOBAYASHI* (Department of Oral Radiology, Tsurumi University School of Dental Medicine, Yokohama, Japan)

The purpose of this presentation was to find out a possible correlation between the MRI image of the temporomandibular joint (TMJ) suffering from joint pain and the existing symptomatic joint pain and internal derangement. In 1992, Westesson and Brocks suggested that the joint effusion was closely associated with joint pain. However, the present study was conducted to assess the correlation to determine whether the MRI image of the temporomandibular joint could be used as a diagnostic tool for joint pain. The study results demonstrate that the MRI image of the temporomandibular joint could be used as a diagnostic tool for joint pain. Therefore, the MRI image of the temporomandibular joint could be used as a diagnostic tool for joint pain.