



**NEW YORK UNIVERSITY**  
COLLEGE OF DENTISTRY



# 2010 AADR Media Guide

**American Association for Dental Research**

A Collection of the College's Presentations/Posters/Exhibits



# Table of Contents

## THURSDAY, MARCH 4, 2010

126 Organogold(III) Complexes Differentially Induce Apoptosis In Oral Epithelial Cells.....	1
65 Findings of the CONDOR Case-Control Study of ONJ.....	2
89 Modified Y-TZP Core Design Improves All-Ceramic Crown Reliability .....	3
166 Randomized Controlled Experimental Gingivitis Study of CPC Rinse in Twins.....	4
New Implant Surfaces and Strategies for Control of Peri-implant Epithelium and Fibrous Tissue Attachment .....	5
Lessons Learned from PBRN Studies .....	6
Caries Management by Risk Assessment - What's the Evidence? .....	6
256 Staining Characteristics of Sports Drinks on Dentin and Enamel .....	7
273 Inter-operator Tooth Color Measurement in Twins using Digital Imaging .....	8
571 Effect of HIV infection and HAART on Oral Bacterial Colonization .....	9
425 Long-Term Resin Bond Strength Of Graded Glass-Zirconia Structures.....	10
522 Determination of Free Fluoride in 20 International Toothpastes.....	11
438 Effects of Sterilization Methods on Composite-to-Dentin Shear Bond Strengths.....	12
483 Effects of Compositional Changes on Properties of Calcium Phosphate Glass .....	13
617 The Role of BAX Translocation in Mitochondrial Dynamics.....	14
484 Sintering and Chemical Characterization of HA/ $\beta$ -TCP Scaffolds .....	15
578 Evaluating Bone Microbiota In Bisphosphonate Related Osteonecrosis Of The Jaw.....	16

**FRIDAY, MARCH 5, 2010**

748 Characterization of Satellite Cells from Rats and Expanded in Culture.....17

787 Effect of Desensitizing Toothpaste on Dentin Bond Strength .....18

792 Effect of Calcium/phosphate Paste on Dentin and Enamel Bond Strengths .....19

872 Knowledge and Awareness of Diabetes Mellitus in the NYU Clinic .....20

974 Role of Foxo1 in Bone Formation .....21

852 HIV Status of Women and Dental Caries over 10 Years .....22

1141 Method for Isolation of a Biologically Active Component from OSCC .....23

1449 Oral Cancer and Stromal Cells as Contributors of Inflammatory Factors .....24

1109 Effect of Drilling Speed on Early Integration of Endosseous Implants.....25

1092 Maternal influence on S.mutans colonization and ECC in Thai children.....26

1110 In Vivo Evaluation of Nanometer Scale Roughness Surfaces.....27

1007 Gene Expression in Osteoblasts Cultured with Collagen Membranes.....28

1142 Rapid Quantification by ELISA of the Activated Tumor Suppressor BAX .....29

**SATURDAY, MARCH 6, 2010**

1228 Strength and Fracture Behavior of Alumina-Glass Graded Restorative Material .....30

1334 Self v Light Cure Composite Cement Bonding to Core Composite.....32

**SATURDAY, MARCH 6, 2010**

1274 The Role of Corticosteroids in Today's Dentistry .....33

1298 Fatigue Behavior of Glass-infiltrated Functionally Graded Zirconia under Simulated Mastication ...34

1507 Dentin Caries Activity in Occlusal RBC Restorations: PEARL Network Findings .....35

1424 Effect of Protease Inhibitors on Assessment of Oral Microbes.....36

1296 Effects of Cold Air Plasma on Biofilm Formation.....37

1418 Characterization Of Bacterial Nuances In Oral Squamous Cell Carcinoma Tissues.....38

1497 H. pylori, Periodontal Pathogens, and Risk Factors of Gastric Cancer .....39

1396 Effect of Starch and Sucrose on Biofilm Composition and Acidogenicity .....40

**AT A GLANCE (LAST PAGES)**

- Sorted by Presentation Title
- Sorted by Session Type
- Sorted by Date

## 126 Organogold(III) Complexes Differentially Induce Apoptosis In Oral Epithelial Cells

---

**Thursday, March 4, 2010: 8 a.m. - 9:30 a.m.**

- ✓ Location: Room 156 (Walter E. Washington Convention Center)
- ✓ Abstract ID 129132

### Oral Session

Most chemotherapeutic agents kill cancer cells by apoptosis, or programmed cell death. Many of these agents like cisplatin rely upon platinum for their reactivity. Recently, organogold(III) compounds have been explored for use in those cases where resistance has developed against platinum-based drugs.

**Objectives:** The cytotoxicity of four novel organogold(III) compounds was determined in three different stages of human oral epithelial cells, which included cancer (MDA686LN), premalignant (MSK Leuk1), and normal primary culture cells using an Alamar blue cell viability assay, fluorescence and time-lapse video microscopy.

**Methods:** Treatment of organogold(III) compounds for 24 hours induced concentration dependent cell death, which was accompanied by the appearance of apoptotic markers such as cell shrinkage, blebbing, nuclear condensation, and exposure of phosphatidyl serine to the extracellular side.

**Results:** The mechanism of action of these compounds seems to be related to altered mitochondrial functions because fragmentation and loss of mitochondrial membrane potential were correlated with cell death. Among the tested organogold(III) compounds, compound #4 (GC) showed higher toxicity for cancer cells over premalignant or normal cells. The half maximal lethal dose (LD<sub>50</sub>) of compound #4 (GC) was 4, 30, and 9  $\mu$ M for cancer cells, premalignant, and normal cells, respectively.

**Conclusion:** These results suggest that organogold(III) compound # 4 may have a therapeutic window in the low micromolar range when used for chemotherapy to selectively kill oral cancer cells. Further research is needed to identify the detailed mechanism of drug action. This research was funded and made possible by the Dean's Award for Student Research (NYUCD) to HH and NIH grant GM57249 to KWK.

*H.H. HSU1, P. PEIXOTO1, S.-Y. RYU1, P.G. SACKS1, K. FLEISHER1, M. CONTEL2, and K.W. KINNALLY1, 1New York University College of Dentistry, New York, NY, 2Brooklyn College- City University of New York, New York, NY*

## 65 Findings of the CONDOR Case-Control Study of ONJ

---

**Thursday, March 4, 2010: 8 a.m. - 9:30 a.m.**

- ✓ Location: Room 147B (Walter E. Washington Convention Center)
- ✓ Abstract ID: 127563

### **Symposium**

*F.A. CURRO, New York University, PEARL, and CONDOR, New York, NY*

## 89 Modified Y-TZP Core Design Improves All-Ceramic Crown Reliability

---

**Thursday, March 4, 2010: 8 a.m. - 9:30 a.m.**

- ✓ Location: Room 150B (Walter E. Washington Convention Center)
- ✓ Abstract ID 129967

### Oral Session

**Objective:** this study tested the hypothesis that all-ceramic core-veneer system crown reliability is improved by modifying the core design.

**Methods:** A tooth preparation was modeled by reducing height of proximal walls by 1.5 mm and occlusal surface by 2.0 mm. The CAD-based tooth preparation was replicated and positioned in a dental articulator for core and veneer fabrication. Standard (even 0.5 mm thick) and modified (2.5 mm height lingual and interproximal cervical areas) core designs were produced followed by the application of and 1.5 mm veneer porcelain. The crowns were cemented to 30-day aged composite dies. Bonded crowns were aged 14 days in water and either single load to failure or step-stress accelerated fatigue tested.

**Results:** Use level probability plot for a use stress of 200 N showed significantly higher reliability for modified core design group. Fatigue was a fracture accelerator factor for both groups. Veneer chipping not exposing the core for standard group and exposing the core for modified group were the fatigue fracture modes.

**Conclusion:** core design alteration resulted in higher reliability and different fracture pattern under fatigue loading.

*N. SILVA<sup>1</sup>, B. RAFFERTY<sup>1</sup>, R. ZAVANELLI<sup>2</sup>, E. BONFANTE<sup>1</sup>, E.D. REKOW<sup>1</sup>, V. THOMPSON<sup>3</sup>, and P. COELHO<sup>1</sup>, <sup>1</sup>New York University, New York, NY, <sup>2</sup>New York College of Dentistry, New York, NY, <sup>3</sup>New York University College of Dentistry, New York, NY*

# 166 Randomized Controlled Experimental Gingivitis Study of CPC Rinse in Twins

---

**Thursday, March 4, 2010: 10:45 a.m. - 12:15 p.m.**

- ✓ Location: Room 150A (Walter E. Washington Convention Center)
- ✓ Abstract 129405

## Oral Session

**Objectives:** A pilot, randomized, double-blind, controlled clinical trial was conducted to evaluate the feasibility of using twin pairs to assess gingivitis treatment effects with induced (experimental) gingivitis.

**Methods:** After informed consent and child assent (where appropriate), 30 teen-to-adult twin pairs were enrolled in an experimental gingivitis study with oral hygiene promotion (14 days) and gingivitis induction (21 days). A prophylaxis was administered at the beginning, and again at the conclusion of the research, to restore health. During the gingivitis induction phase only, one of the twin pairs was randomly assigned to 0.07% cetylpyridinium chloride rinse (Crest® Pro-Health), and the other was assigned a color-matched 0.05% sodium fluoride control rinse. Rinsing was twice daily with 20 mL for 30 seconds. Gingivitis was measured at Days 0 (baseline), 14 (after hygiene phase) & 35 (after no hygiene phase) by stimulating the interproximal papilla and assessing bleeding after 15 sec using the 6-point Papillary Bleeding Score (PBS). Standard digital images were collected.

**Results:** The 60 subjects, who ranged from 13-30 years of age, consisted of 12 monozygotic (MZ) and 18 dizygotic (DZ) pairs. Groups were balanced ( $p > 0.59$ ) on starting PBS, and during initial hygiene, mean (SD) PBS was significantly ( $p < 0.001$ ) reduced by 0.65 (0.69) from starting levels. After 21 days without hygiene, rinse groups in older twin (17+ years) pairs differed significantly ( $p < 0.05$ ) with a mean PBS difference of 0.27 favoring the cetylpyridinium chloride rinse.

**Conclusions:** Use of a 0.07% cetylpyridinium chloride rinse significantly ( $p < 0.05$ ) reduced gingivitis versus a control rinse during a 21 day no hygiene period, and establishes the feasibility of an older twin pair model for clinical assessment of antimicrobial activity

*.W.A. BRETZ1, P.M. CORBY1, A.L. CORBY2, A.L. MOREIRA2, M.F. GABBARD3, M.L. BARKER3, R.W. GERLACH3, and A.R. BIESBROCK3, 1New York University, New York, NY, 2Twins Institute for Genetics Research, Montes Claros, Brazil, 3The Procter & Gamble Company, Mason, OH*

## New Implant Surfaces and Strategies for Control of Peri-implant Epithelium and Fibrous Tissue Attachment

---

**Thursday, March 4, 2010: 12:15 p.m.-1:30 p.m.**

- ✓ Location: Room 146C (Walter E. Washington Convention Center)
- ✓ Abstract 127272

### **Lunch and Learning**

Description: Establishment of peri-implant epithelium and fibrous tissue attachment is important for implant health, bone retention, and esthetics. Strategies including implant surface modifications and new designs have been effective. This presentation discusses the mechanisms related to peri-implant epithelium and fibrous tissue attachment. Clinical strategies and published outcomes are discussed.

Sponsored by: Implantology Research

Organizer: B. LEBLEBICIOGLU

*J.L. RICCI, New York University College of Dentistry, New York, NY*

## Lessons Learned from PBRN Studies

---

**Thursday, March 4, 2010: 12:15 p.m.-1:30 p.m.**

- ✓ Location: Room 146C (Walter E. Washington Convention Center)
- ✓ Abstract 127693

### Lunch and Learning

Description: An overview of the progress of the Practice Based Research Network will be the focus of the presentation. The specific focus will be the lessons learned in the organization and execution of project through a PBRN.

Sponsored by: Dental Materials

Organizer: M.A. LATTA

*V.P. THOMPSON, New York University, New York, NY*

## Caries Management by Risk Assessment – What’s the Evidence?

---

**Thursday, March 4, 2010: 12:15 p.m.-1:30 p.m.**

- ✓ Location: Room 146C (Walter E. Washington Convention Center)
- ✓ Abstract 127489

### Lunch and Learning

Description: Caries management has evolved from the interventional tenants of GV Black to a management scheme that involves assessing a patient’s risk to developing caries, prevention and intervention prior to cavitation and minimal surgical intervention to treat cavitation. This session will discuss the evidence supporting Caries Management by Risk Assessment.

Sponsored by: Cariology Research

Organizer: M. PETERS

*M.S. WOLFF, New York University, New York, NY*

## 256 Staining Characteristics of Sports Drinks on Dentin and Enamel

---

**Thursday, March 4, 2010: 2 p.m. - 3:15 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129708

### Poster Session

Consumption of sports drinks has been demonstrated to cause acid damage on enamel, softening of dentin, and exposure of dentin tubules. Little is known about the effects of sports drinks on staining dentin and enamel.

**Objective:**-To determine the ability of sports drinks to stain dentin and enamel and determine the ability of a common whitening agent to remove the stain.

**Methods:**-Dentin was exposed on twelve bovine incisors. Two teeth each were immersed in either red or blue Gatorade®(Chicago, IL) for 10/20/60 minutes. Teeth were fractured exposing a cross section. 10% Carbamide peroxide (CP)(Opalescence® Ultradent, South Jordan, UT) was applied to one half of each tooth for 8 hours. Stain penetration and effectiveness of bleach on dentin and enamel were examined under a microscope at 40 and 80x magnification and photographed. Stain intensity was measured utilizing a modified (30mm) Visual Analogue Scale (VAS) for intensity.

**Results:**-Teeth immersed in red Gatorade® stained deeper than blue. Minimal penetration of stain into the tooth was noted for 10 or 20 minutes. 60 minute immersion in red and blue drinks demonstrated a mean enamel penetration depth of 68.94µm and 59.54µm and dentin penetration of 391.98µm and 205.84µm respectively. CP effectively removed most stains, except the 60 minute. VAS evaluation revealed intensity of stain to be time dependent with red staining more aggressively than blue and dentin staining worse than enamel.

**Conclusion:**-Sports drinks stain both dentin and enamel under prolonged consumption. Red stained deeper and more intensely than the blue. Dentin is more susceptible to staining than enamel. Patients with exposed dentin must reduce the frequency and duration of sports drink consumption to prevent tooth staining. CP was effective in bleaching most of the stain caused by sports drinks, with greater removal of blue than red stain; however, it was not effective in removing the deepest stains.

*S. BAE, C. DIMAGGIO, T. BROMAGE, A. WOJCIK, and M. WOLFF, New York University College of Dentistry, New York, NY*

## 273 Inter-operator Tooth Color Measurement in Twins using Digital Imaging

---

**Thursday, March 4, 2010: 2 p.m. - 3:15 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129439

### Poster Session

**Objectives:** This research evaluated the inter-operator measurement reproducibility in twins using a digital imaging system to measure tooth color.

**Methods:** Two operators (experienced and naive) collected tooth color from 9 sets of healthy twins on a single day. Images were captured under fixed polarized lighting conditions using a high resolution digital camera (JVC CCD) with a zoom lens using a standard method. For each image, maxillary anterior tooth pixels were classified and counted, and average  $L^*a^*b^*$  tooth colors were derived using standard formulas. Intra-class correlations (ICC) and 95% lower confidence bounds (LCB) were calculated using a 0-to-1 scale, where 0 represented no agreement and 1 represented perfect agreement.

**Results:** The 18 subjects ranged from 16-28 years of age, and all image pairs were included in the analyses. Inter-operator tooth pixel count, a measure of alignment, differed by 0.32%. For color, the experienced operator had means (SD) of 15.51 (1.81) for  $b^*$ , 74.49 (1.83) for  $L^*$  and 4.42 (0.76) for  $a^*$ . The naive operator exhibited appreciable reproducibility, with means (SD) of 15.51 (1.76), 74.46 (1.80) and 4.41 (0.74) for  $b^*$ ,  $L^*$  and  $a^*$ , respectively. The inter-operator pixel count ICC (95% LCB) was 0.93 (0.86). For color, the ICC (95% LCB) was 0.99 (0.98) for  $b^*$  yellowness, 0.98 (0.97) for  $L^*$  lightness, and 0.99 (0.97) for  $a^*$ . Adjusting for differences due to gender and age, between-family variance for  $L^*a^*b^*$  tooth color accounted for 60.5% to 92.0% of the variability, within-family variance accounted for 7.3% to 38% of the variability and 0.7% to 1.7% was residual or unexplained variance.

**Conclusions:** This research demonstrates digital image analysis yields highly reproducible clinical measurement of tooth color between systems operators.

*P.M. CORBY1, W.A. BRETZ1, A.L. CORBY2, A.L. MOREIRA2, M. D'AQUINO SILVA2, A.R. BIESBROCK3, A.A. WALANSKI3, M.E. RUBUSH3, M.L. BARKER3, and R.W. GERLACH3, 1New York University, New York, NY, 2Twins Institute for Genetics Research, Montes Claros, Brazil, 3The Procter & Gamble Company, Mason, OH*

## 571 Effect of HIV infection and HAART on Oral Bacterial Colonization

---

**Thursday, March 4, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 128939

### Poster Session

Individuals with HIV infection are at greater risk for opportunistic oral infection and poor oral health, including dental caries and periodontal disease.

**Objectives:** To determine the effect of HIV infection and HAART on specific cariogenic and periodontopathogenic bacterial colonization in the dental plaque.

**Methods:** A total of 135 pooled plaque samples were collected from five HIV-positive individuals before and after HAART; and five age-, gender- and race/ethnicity-matched HIV-negative controls. The quantification of *S. mutans* and *S. sobrinus* (cariogenic bacteria) and *P. gingivalis*, *T. forsythia*, *A. actinomycetemcomitans*, and *T. denticola* (periodontopathogenic bacteria) were performed by using quantitative real-time PCR (qPCR) with species-specific primers.

**Results:** Although *S. mutans*, *S. sobrinus* and *T. denticola* were detected in both HIV+ and HIV- individuals, *S. mutans* was significantly higher in the HIV+ group compared to the HIV- group ( $p = 0.038$ ). In the HIV+ group, more individuals were PCR positive with *A. actinomycetemcomitans* compared to HIV- group; individuals who were *A. actinomycetemcomitans* positive prior to HAART became negative 6 months after the treatment. The qPCR results showed the level of *A. actinomycetemcomitans* was also significantly decreased after HAART ( $p = 0.018$ ).

**Conclusion:** This preliminary study demonstrates that the colonization of oral bacteria appears to be associated with HIV infection and HAART. Further investigation is needed not only into the quantitative changes in colonization, but also the mechanisms by which the oral bacteria altered under the various stages of HIV infection.

Supported by research grants U19 DE018385 and DE015706 from NIDCR/NIH.

Z. CHEN, G. LIU, N. CHHUN, D. SAXENA, D. MALAMUD, and Y. LI, New York University, New York, NY

## 425 Long-Term Resin Bond Strength of Graded Glass-Zirconia Structures

---

**Thursday, March 4, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Room 145B (Walter E. Washington Convention Center)
- ✓ Abstract 130080

### Discussion Session

**Objectives:** A novel glass/zirconia/glass (G/Z/G) composite has been developed to address clinical performance deficiencies of Y-TZP zirconia-based all-ceramic restorations. G/Z/G exhibits improved strength and aesthetic properties compared to monolithic Y-TZP. This research investigates the long-term shear bond strength of G/Z/G to a resin composite after pretreatment with a combination 10-methacryloyoxydecyl dihydrogen phosphate (MDP) monomer and silane coupler (Clearfil Ceramic Primer, Kuraray, Japan). A parallel study is performed on monolithic Y-TZP zirconia.

**Methods:** G/Z/G plates were prepared using a glass-ceramic infiltration technique. Excess glass was removed using 9.6% HF gel etch for 5 min. Y-TZP plates were fabricated by manufacturer then prepared by 70 $\mu$ m grinding (to simulate CAD/CAM preparation). All specimens received a pretreatment with Clearfil ceramic primer followed immediately by bonding with resin cement (Clearfil Esthetic). A 2.0 mm cylinder of resin cement was bonded to the exposed ceramic surfaces, atop the primer layer. Samples were randomly divided between short-term storage (3 days at 37°C) and long-term storage (20,000 thermocycles between 5 and 55°C). Minimum 12 specimens were used for each testing condition. The shear bond test was conducted using a universal testing machine at a crosshead speed of 1 min/mm.

**Results:** The short term shear strength of G/Z/G and Y-TZP were comparable. The long term shear bond strength for G/Z/G ( $7.34 \pm 2.63$  MPa, mean  $\pm$  SD) was significantly higher than that for Y-TZP ( $3.59 \pm 0.82$  MPa).

**Conclusions:** Zirconia with a glass rich graded surface allows for acid etching, providing a strong long-term cement bond compared to monolithic zirconia.

Supported by NIH/NIDCR-R01DE017925 and NSF/CMMI-0758530.

*N. COVEL, New York University, New York, NY, J.W. KIM, New York University, College of Dentistry, Department of Biomaterials and Biomimetics, New York, NY, and Y. ZHANG, New York University College of Dentistry, New York, NY*

## 522 Determination of Free Fluoride in 20 International Toothpastes

---

**Thursday, March 4, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129726

### Poster Session

Optimum levels of fluoride ion plays an important role in caries prevention. Manufacturers have been developed many anti-caries toothpastes, and labeled them as having fluoride to attract consumers. However, only Free Fluoride can act as an anti-caries agent. Free fluoride can easily become bound to compounds in the toothpaste and become unavailable in the mouth.

**Objective:** To determine the Free and Total Fluoride in Toothpastes from Foreign countries utilizing Fluoride electrode.

**Methods:** 20 commercially available toothpastes from different countries: China(6), Korea(1), Brazil(3), Spain(1), Philippines(2), Egypt (1), Poland(1), India(2), USA(3) were collected. 2g of each toothpaste was dissolved in 10ml of distilled water. Samples were vortexed, centrifuged for 5 minutes and free Fluoride ion was determined using 100  $\mu$ l of supernatant added to 4.9 ml of distilled water, and 5ml of TISABII (Total Ionic Strength Adjustment Buffer). A Fluoride electrode made in France by Radiometer Analytical S.A. was utilized to measure the free Fluoride. Total Fluoride was determined by hydrolyzing 1ml of the above supernatant with 1ml of 2N perchloric acid in a plastic vial for overnight. 100  $\mu$ l of the hydrolyzed sample were diluted with 4.9ml of distilled water and 5.0ml of TISAB II to constitute 10ml volume. Solid sodium acetate was added to bring the pH of the solution to be 5.5. The fluoride electrode was utilized to measure the total fluoride in solution.

**Results:** 14 of the 20 toothpastes had Free Fluoride levels well below therapeutic levels (even when labeled as anti-caries). Only 2 of the 20 toothpastes are at therapeutic level.

**Conclusion:** Absence of monitoring the fluoride available in toothpastes results in toothpastes that do not meet routine anti-caries level. Free ionizable fluoride concentrations of toothpastes were different than what was declared on the toothpaste.

*R. KAUR, and M.S. WOLFF, New York University College of Dentistry, New York, NY*

## 438 Effects of Sterilization Methods on Composite-to-Dentin Shear Bond Strengths

---

**Thursday, March 4, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129905

### Poster Session

Education of dental students with extracted human teeth has multiple benefits. Two issues exist, how best to disinfect the tooth to make it safer to handle (while still utilizing universal precautions) and does the disinfection alter the strengths to the tooth.

**Objective:** Determine if disinfection affects the bond strength to dentin and if bacterial counts could be reduced to render teeth safer to handle.

**Methods:** Fifty intact, virgin teeth extracted for orthodontic treatment or third molar removals were utilized. A secondary objective was to analyze whether these sterilization methods did indeed disinfect the teeth prior to educational or research use. The ten teeth were randomly assigned to one of five different groups, 2.5% Glutaraldehyde (G), 0.5% Chloramine-T (C) and tap water (W - control), 1:10 household bleach (B) and steam autoclave (S). Extracted teeth were stored in water after extraction until they were submerged in 5mL Ringer's solution. Serial dilutions were made and the samples were plated via an autoplate onto Enriched Tryptic Soy Agar (ETSA) for 72 hours. Teeth were submerged in the above disinfectants for 48 hours and then repeat cultured as above. Teeth were then sectioned to expose dentin and a 2.38mm column of composite was bonded to the dentin. After at least 24 hours, the composite was subject to a shear force and force at failure recorded.

**Results:** Disinfection for 48 hours resulted in reduction in CFU ( $\text{CFU} \times 10^4/\text{ml}$ ) G-from 4.9094 to 0.0002, C-from 5.8138 to 0.0003, W-from 5.5478 to 4.9394, B-from 5.6313 to 0.0001 and S-from 5.9345 to 0. Mean bond strengths were (MPa $\pm$ s.d.) – G 16.01( $\pm$  2.54), C-14.95( $\pm$  4.56), W-23.41( $\pm$  11.52), B-15.50( $\pm$ 4.53) and S-16.32( $\pm$ 3.84).

**Conclusions:** Treatment groups sterilized teeth effectively. All treatment groups reduced shear bond strengths from W group.

*M. LE, New York University, New York, NY*

# 483 Effects of Compositional Changes on Properties of Calcium Phosphate Glass

Thursday, March 4, 2010: 3:30 p.m. - 4:45 p.m.

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129529

## Poster Session

**Objectives:** Determining the effect of compositional changes on the dissolution and mechanical properties of calcium phosphate glass (CPG) of the system CaO-P<sub>2</sub>O<sub>5</sub>-NaF-MgO-ZnO, for biomedical applications.

**Methods:** Different compositions of CPG were made by varying the amount of fluoride (F) from 0–4% and the calcium to phosphate molar ratio (Ca/P) to either 0.6 or 0.8. Dissolution properties were determined by suspension in acidic buffer and calcium ion release with time monitored Inductive Coupled Plasma. Mechanical properties were determined using a universal testing machine and Vickers indentation.

**Results:** Statistical analysis showed a decrease in flexural strength and increase in Calcium ion dissolution as the Ca/P was increased. No significant changes were observed in terms of toughness and hardness upon varying the Ca/P ratio. Increasing %F decreased the strength, and had little effect on hardness, toughness or ion release.

Composition	Dissolution(ppm / hour)	Strength (MPa)	Toughness (MPa /m <sup>2</sup> )	Hardness (GPa)
CaP 0.6 0%F	4.55 ± 1.6	69.79 ± 15.33	1.07±0.05	2.04 ± 0.08
CaP 0.6 2%F	4.38 ± 0.58	46.87 ± 9.13	1.02±0.06	2.07 ± 0.01
CaP 0.6 4%F	5.83 ± 0.66	45.04 ± 2.74	1.15±0.11	2.25 ± 0.05
CaP 0.8 0%F	7.54 ± 1.81	53.64 ± 13.33	1.27±0.50	2.18 ± 0.20
CaP 0.8 2%F	8.58 ± 1.02	19.73 ± 2.89	1.48±0.02	2.52 ± 0.04
CaP 0.8 4%F	8.57 ± 0.85	15.39 ± 2.45	1.11±0.10	2.25 ± 0.14

**Conclusions:** The dissolution and mechanical properties of CPG can be varied significantly by manipulating the Ca/P ratio and %F, allowing the CPG to be tailored to specific applications in implant orthopedics and dentistry.

Supported by NIH/NIDCR-R01DE017925 and NSF/CMMI-0758530.

G. CATIG, and E. LIAO, New York University, New York, NY

## 617 The Role of BAX Translocation in Mitochondrial Dynamics

---

**Thursday, March 4, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129099

### Poster Session

**Background:** MAC, or mitochondrial apoptosis-induced channel, forms in the outer membrane of mitochondria from proapoptotic Bcl-2 family proteins in the presence of apoptotic stimuli. During apoptosis, BAX undergoes a conformational change and translocates from the cytosol to the outer membrane of mitochondria where it oligomerizes to form the pore of MAC. The formation of MAC allows cytochrome c release into the cytosol, which triggers a biochemical cascade that commits the cell to apoptosis.

**Objectives:** Here, the role that the formation of MAC has on mitochondrial morphology and dynamics was investigated. Previously, mitochondria were visualized in a human salivary gland (HSG) cells after transfection with a plasmid encoding a green fluorescent protein targeted to the mitochondrial matrix (mtGFP). Time-lapse fluorescence microscopy showed fragmentation of mitochondrial networks after treatment with staurosporine to induce apoptosis. In order to establish the temporal relationship between MAC formation and mitochondrial dynamics, studies were shifted to clone 10 cells, which are HeLa-derived cells expressing a low level of GFP-BAX.

**Methods:** Translocation of GFP-BAX to mitochondria was used to signal MAC formation. Clone 10 cells were transfected with pDSRed2-Mito, which encodes a red fluorescent protein targeted to the mitochondrial matrix, to monitor mitochondrial structure. Time-lapse fluorescence microscopy was used to monitor BAX translocation (green) and mitochondrial morphology (red) simultaneously after treatment with staurosporine to induce apoptosis.

**Results:** MAC formation as indicated by BAX translocation occurred upstream of mitochondrial fragmentation and network collapse during apoptosis.

**Conclusion:** The kinetics suggest the two processes of Bax translocation and mitochondrial fission are closely linked during apoptosis.

This work was supported by a Dean's Award to RR and NIH grant GM57249 to KWK.

*R. RANGE, P. PEIXOTO, S.-Y. RYU, and K.W. KINNALLY, New York University College of Dentistry, New York, NY*

# 484 Sintering and Chemical Characterization of HA/ $\beta$ -TCP Scaffolds

Thursday, March 4, 2010: 3:30 p.m. - 4:45 p.m.

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129555

## Poster Session

**Objective:** To characterize hydroxyapatite (HA) and beta-tricalcium phosphate ( $\beta$ -TCP) mixture containing 15% HA and 85%  $\beta$ -TCP varying sintering temperatures and chemical characterization for scaffolds.

**Methods:** Constructed HA/ $\beta$ -TCP rods were allowed to dry and left in green state (just allowed to dry, no sintering) or sintered at 1100°C for 4 hours (n=3 for each group). These temperatures along with the rods underwent to x-ray diffraction to determine crystal size and purity of the HA/ $\beta$ -TCP, and Fourier transform infrared spectrometer (FT-IR) to test the consistency of the HA/ $\beta$ -TCP mixture. SEM imagings were obtained to observe nano, micro, and macro pores of the overall rod structure.

**Results:** The XRD graph (Figure 1) illustrates that the sintered group had a higher intensity in the peaks in comparison to the un-sintered, green state, group. The FT-IR results (Figure 2) show consistency of the 15/85 HA/ $\beta$ -TCP mixture in the two different states (green state and sintered). The shaded region around 2850cm<sup>-1</sup>, in the green state, represents some organic matter, which has been removed during the sintering process.

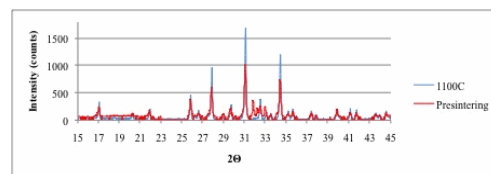


Figure SEQ Figure \\* ARABIC 1: XRD Graph of 15/85 HA/ $\beta$ -TCP

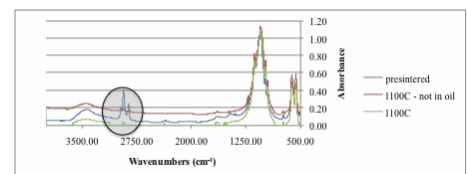


Figure SEQ Figure \\* ARABIC 2: FT-IR Graph of the 15/85 HA/ $\beta$ -TCP

**Conclusion:** The sintering of the HA/ $\beta$ -TCP causes densification of the material. The density of the material is evident in the peaks on the XRD along with images taken on the SEM.

L. WITEK1, N. SILVA1, J. RICCI1, E. CLARK1, J. SMAY2, M. PINES1, and P. COELHO1, 1New York University, New York, NY, 2Oklahoma State University, Stillwater, OK

## 578 Evaluating Bone Microbiota In Bisphosphonate Related Osteonecrosis Of The Jaw

---

**Thursday, March 4, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129909

### Poster Session

Osteonecrosis of the jaw (ONJ) is a disease characterized by bone death and associated with mainly intravenous bisphosphonate (BP) drugs occurring commonly after dental procedures, that exposes the jawbone to microorganisms present in oral cavity. Infection has been hypothesized as a contributing factor to ONJ. Specifically, microorganisms may play a direct cause and effect relationship in progression of ONJ, or infection may be a consequence of bacterial colonization of necrotic jawbone tissue. Currently, no data is available elucidating the microbial state of jawbones in ONJ. This is the first investigation to generate molecular profiles of bacterial species present in the bone of ONJ subjects.

**Objectives:** The objective of the current study is to use molecular biology techniques to examine bone samples of control vs. ONJ subjects in attempt to find possible microbial shifts that may associate with the pathogenesis of ONJ.

**Methods:** Total genomic DNA was extracted from bone samples of six control and six ONJ subjects treated with BP. The 16S rDNA sequence was amplified with universal set of primers, cloned and sequenced and also subjected to denaturing gradient gel electrophoresis.

**Results:** Approximately 20 ng/ul of DNA was extracted from each bone samples. A total of 1,152 clones were collected and processed for sequencing and bacterial phylotypes identified using Ribosomal database. DGGE profile confirmed distinct varied banding pattern indicating presence of single or multiple bacterial species in control and ONJ samples.

**Conclusions:** 16S rDNA gene sequencing is a powerful approach to determine composition of microbial population, including uncultivable bacterial species, present in bone samples. Initial data indicate possible microbial shifts associated with ONJ. Identification of specific bacterial phylotypes will allow its associated pathogenesis to ONJ and pave the way to detect at-risk patients. Supported by CTST grant UL 1RR024996 and NYUCD Dean's Award for Student Research.

*C.Y. WONG<sup>1</sup>, X. WEI<sup>2</sup>, S. PUSHALKARI<sup>1</sup>, Y. LI<sup>1</sup>, M. FORNIER<sup>3</sup>, A. FAROOKI<sup>4</sup>, C. ESTILOS<sup>5</sup>, and D. SAXENA<sup>1</sup>,  
1NYU College of Dentistry, NY, 2Polytechnic Institute of NYU, NY, 3Memorial Sloan Kettering Cancer Center, Breast Cancer Medicine Service, Department of Medicine, NY, 4Memorial Sloan Kettering Cancer Center, Endocrinology Service, Department of Medicine, NY, 5Memorial Sloan Kettering Cancer Center, Dental Service, Department of Surgery, NY*

## 748 Characterization of Satellite Cells from Rats and Expanded in Culture

---

**Friday, March 5, 2010: 10:45 a.m. - 12:15 p.m.**

- ✓ Location: Room 140A (Walter E. Washington Convention Center)
- ✓ Abstract 128795

### Oral Session

**Objectives:** To make a skeletal muscle implant for repairing a defect in facial muscle it is essential to culture and expand a relatively pure population of satellite cells from a non-debilitating muscle biopsy. The cell mixture isolated from muscle contains satellite cells and non-myogenic cells derived from other populations in the muscle interstitium and vasculature, with satellite cells being in the minority. Thus, the purification of satellite cells is needed in order to get an enriched population of satellite cells for muscle tissue engineering.

**Methods:** In this study, we used Percoll gradient centrifugation and flow cytometry to enrich and characterize satellite cells isolated from skeletal muscle. The mixed cell population isolated from adult rat muscle was run on a Percoll gradient, cells were isolated from the various bands and stained using desmin and integrin alpha-7 antibodies, and examined in a Becton Dickinson FAC Sort. Data collection was done using CellQuest Pro™ program with subsequent data analysis done using the FlowJo software. Cells were also examined with a Zeiss Perkin Elmer Confocal and Nikon Eclipse TE 2000-U microscopes. Images from were processed using image J program. Satellite cells from neonatal animals were used as a positive control for establishing the staining procedure.

**Results:** The analysis showed that satellite cells are in low abundance after expansion in culture, but can be enriched by Percoll gradient centrifugation to a level that should be isolatable using a fluorescence activated cell sorter.

**Conclusion:** These results establish the feasibility of using alpha 7 integrin antibodies and flow cytometry to isolate enriched populations of satellite cells from a mixture of cells. This study is an important step toward achieving our long-term goal of making a striated muscle implant, derived from the patient's own satellite cells.

This work was supported in part by NIH grant DE14599 to LT.

*Y.J. SHIN, N. TYHOVYCH, K. PARK, S. HALEY, and L. TERRACIO, New York University, New York, NY*

## 787 Effect of Desensitizing Toothpaste on Dentin Bond Strength

---

**Friday, March 5, 2010: 2 p.m. - 3:15 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129436

### Poster Session

A new sensitivity toothpaste utilizes an arginine bicarbonate/calcium carbonate compound to plug tubules. Little is known about the effect of this product on the ability to bond to dentin.

**Objectives:** Determine the effect of Colgate® Sensitive Pro-Relief (PR) (Piscataway, NJ) toothpaste on dentin bonding.

**Methods:** Bovine incisors were sectioned and prepared into 27 dentin specimens. 13 specimens (E) were treated for 10 sessions of 2 minutes brushing with (PR), followed by a 30 second agitated water wash after each brushing. 14 specimens were treated with flour of pumice only (C). Each specimen was dried, etched with 35% phosphoric acid for 15 seconds, washed clean and bonding agent applied and polymerized. A 2.38 mm diameter column of Filtek Supreme (3M, St Paul MN) A2 was bonded to the surface and polymerized as per manufacturer's instructions. Specimens were stored in water for at least 48 hours, subjected to a shear force at a crosshead speed of 0.5 mm/min on an Instron (Canton, MA) mechanical testing device and force at failure recorded. Mean shear strength (+se) was calculated and significant differences were calculated with a two-tailed Student's T-test.

**Results:** Mean shear force (MPa +s.e.) were E: 19.6 (+9.4) and C: 15.4 (+6.0) with  $p < 0.19$ .

**Conclusions:** No significant differences were found for bond strength to dentin treated with (PR) or pumice. Dentists can achieve optimal dentin bonding results if a patient is using (PR) to manage dentin hypersensitivity.

*G. CANARES, M. PINES, T. SALGADO, and M. WOLFF, New York University College of Dentistry, New York, NY*

## 792 Effect of Calcium/phosphate Paste on Dentin and Enamel Bond Strengths

---

**Friday, March 5, 2010: 2 p.m. - 3:15 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129794

### Poster Session

Remineralization techniques utilized for early carious lesions involve the application of calcium phosphate to exposed tooth structure to remineralize and restore the integrity of a tooth. It is unknown as to the effect the use of calcium phosphate may have on the ability to bond to dentin and enamel.

**Objective:** The objective of this study is to determine if the use of a calcium phosphate containing paste adversely affects dentin and enamel bond strength.

**Methods:** Forty bovine incisors were utilized to obtain twenty dentin and twenty enamel specimens. All specimens were treated with artificial caries solution for 5 days to create demineralization on the dentin and enamel surfaces. Specimens were randomly assigned to 4 treatment groups, enamel in saliva control (EC), enamel treated with calcium phosphate for 10 minutes a day over 7 consecutive days followed by saliva (ECa), dentin in saliva control (DC) and dentin treated with calcium phosphate for 10 minutes a day over 7 consecutive days followed by saliva (DCa). A 2.38mm column of composite (Filtek Supreme, 3M-Espe, St Paul MN) was bonded to the surface, composite columns were subject to a shear force at 0.5mm/min, force at failure recorded, mean and standard deviation calculated (MPa+s.d.), and statistical analysis performed with ANOVA.

**Results:** Mean bond strengths: EC-35.70 (+10.6), ECa-37.6 (+4.9), DCa-11.1(+ 9.7) and DC-7.7(+6.5). No significant differences are noted between the calcium phosphate treated and untreated surface for enamel or dentin individually, though significant differences were noted between the dentin and enamel.

**Conclusions:** There was no difference in bond strength as a result of exposure to a calcium phosphate paste in either dentin or enamel bonding. Dentin bond strength was well below expected values. This may have been due to extensive exposure to an artificial caries solution substantially removing mineral from the tooth surface.

*W. DUONG, and M.S. WOLFF, New York University College of Dentistry, New York, NY*

## 872 Knowledge and Awareness of Diabetes Mellitus in the NYU Clinic

---

**Friday, March 5, 2010: 2 p.m. - 3:15 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 128672

### Poster Session

**Objectives:** The purpose of this study was to investigate the level of awareness and knowledge of diabetes mellitus among a large, diverse group of persons attending a dental clinic.

**Methods:** Using a structured, written, English-language questionnaire specifically designed for this study, we interviewed 336 adults on diabetes definitions, risk factors, complications, and prevention, as well as the oral-diabetes relationship.

**Results:** The mean age of the participants was 50.1 years (sd = 16.6), and 54% of the group was female. The group self-identified as white (39.9%), Black (19.9%), Hispanic of either race (19.9%), Asian (6.8%), mixed race (3.0%), or Native American (0.3%). The majority had graduated from high school (13.6%), had some college education (26.2%) or had graduated from college (29.2%). Of the 336 persons interviewed, 24 (7.1%) had never heard of diabetes. Compared to those who had heard of diabetes, these persons were more likely be a racial/ethnic minority ( $p=0.02$ ) and were less educated ( $p=0.009$ ). Of those who had heard of diabetes, most (69.2%) correctly stated that diabetes is more common nowadays compared to in the past and knew that diabetes could be prevented (75.3%), but not cured (63.1%). In addition, while the majority knew that being overweight (84.0%) and a family history of diabetes (80.4%) increase one's diabetes risk, 30.1% mistakenly stated that smoking, and 38.8% mistakenly stated that mental stress (38.8%), predisposed one to development of diabetes. The majority of respondents were correct in identifying the more commonly associated complications of diabetes, including eye problems (76.3%), foot problems (77.2%), kidney problems (71.2%) and high blood pressure (67.9%). However, less than half (46.8%) were aware of the link between diabetes and periodontal disease.

**Conclusion:** While most dental clinic patients demonstrated good knowledge of the risk factors and complications of diabetes, fewer were aware of the oral complications of the disease.

*H. GADE, S.L. RUSSELL, D. ZAHEDI, S.W. YANG, G.L. LAM, M. AGARWAL, and A. SHARMA, New York University, New York City, NY*

## 974 Role of Foxo1 in Bone Formation

---

**Friday, March 5, 2010: 2 p.m. - 3:15 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129998

### Poster Session

**Objectives:** The objective of this study is to investigate the role of Foxo1 on osteoblast differentiation and bone formation.

**Methods:** We studied levels of Foxo1 expression in E15.5 mouse embryos by performing RT-PCR and immunohistochemistry in different tissues. Ex vivo studies were conducted to investigate how Foxo1 silencing, via a virus carrying the miRNA for Foxo1, affects bone formation and growth. Bone development ex vivo was analyzed at histological level by Hematoxylin & Eosin staining and von Kossa staining. We also used a bioinformatics approach to map binding sites for Foxo1 in the promoter of genes involved in osteogenesis.

**Results:** RT-PCR analysis and immunohistochemistry of embryo tissues show for the first time that Foxo1 is highly expressed in skeletal tissues such as cartilage, diaphysis of long bones, and calvaria. The silencing of Foxo1 in cultured tibia caused significant morphological changes and impaired growth. Histological analysis showed reduced bone formation and mineralization in these limbs. From the bioinformatics study, we found that Foxo1 binding sites are present on many of the genes involved in osteogenesis, notably Runx2, Dlx3, and Dlx5.

**Conclusion:** Foxo1 expression and activity are increased in areas of bone formation. Our results suggest that Foxo1 is a significant transcription factor with a crucial role in bone development.

*J. PANG<sup>1</sup>, L. MON THANT<sup>2</sup>, M. ALIKHANI<sup>2</sup>, and C. TEIXEIRA<sup>2</sup>, <sup>1</sup>New York University College of Dentistry, Brooklyn, NY, <sup>2</sup>New York University College of Dentistry, New York, NY*

## 852 HIV Status of Women and Dental Caries over 10 Years

---

**Friday, March 5, 2010: 2 p.m. - 3:15 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129362

### Poster Session

**Objective:** To evaluate whether dental caries varied by HIV serostatus over 10 years among women enrolled in the oral substudy of the Women's Interagency HIV Study (WIHS).

**Methods:** WIHS medical core HIV+ and HIV- women comparable regarding demographic and HIV risk factors. WIHS visits occurred every six months. Data were available from the baseline (1995-96) through the twentieth (2005-06) oral substudy visits. We evaluated differences in demographic, coronal caries (as measured by DFS) and root surface caries (as measured by DFSrc) at baseline among by 677 dentate women (537 HIV+, 140 HIV-) by HIV status using Kruskal-Wallis tests, and used Poisson mixed-effects regression modeling to examine whether changes in coronal caries (as measured by DFS) and/or root surface caries (as measured by DFSrc) varied by serostatus over a 10-year period.

**Results:** Most women were racial/ethnic minorities (58.5% African American, 25.7% Hispanic), had family incomes under 12000 dollars a year (67.3%), and reported either a high school education (31.5%) or less (38.5%). At baseline, DFS ( $p=0.92$ ) and DFSrc ( $p=0.10$ ) did not vary by serostatus (Kruskal Wallance Test). While we found no difference in either DFS or DFSrc over the 10 year period by serostatus (DFS: IRR HIV+=1.08,  $p=0.28$ ; DFSrc: IRR HIV+=1.25,  $p=0.28$ ), we did find a small but significant effect of the interaction term of serostatus and time, which indicated that for DFS, there was a small, but significant increase in the rate of caries increase over time for seropositive compared to seronegative women (IRR HIV+=1.007,  $p=0.001$ ).

**Conclusions:** Compared to HIV seronegative women, seropositive women had a small, but significant increase in the rate of coronal caries, as measured by DFS, over 10 years.

This study was supported by NIDCR (R03DE18375) and the NIH cooperative agreement U01HD32632 with assistance from the NIDCR which funded the WIHS Oral Substudy.

*S.L. RUSSELL, R.G. NORMAN, E. NELSON, and J. PHELAN, New York University, New York, NY*

## 1141 Method for Isolation of a Biologically Active Component from OSCC

---

**Friday, March 5, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129608

### Poster Session

**Objectives:** Oral squamous cell carcinoma (OSCC) is associated with bacteria and chronic inflammation. A major component of the inflammatory infiltrate consists of monocyte lineage cells. Monocyte lineage cell functions are critical for host defense against bacteria and for wound healing. Studies in the laboratory reveal that monocyte responses to Gram-negative bacterial product LPS is significantly altered by soluble products of several OSCC cell lines.

**Methods:** Preliminary studies revealed that the biologically active component is heat-stable and eluted from an anion exchange column with 150 mM NaCl, suggesting that the active component may be a small protein. SDS gradient (4-20%) PAGE of the active fraction showed a complex protein profile. For this reason the active fractions from three different OSCC cell lines was further fractionated using a Superose 200 in series with a Superdex™75 column. Fractions that correspond to peaks on the absorbance readings are profiled using gradient SDS PAGE, revealing both similarities and differences between cell lines. The fractions are then tested for biological activity on freshly purified monocytes to identify the fraction that contains our component of interest.

**Results: & Conclusions:** The approach is being refined to facilitate the purification of sufficient amount of material for subsequent proteome analysis.

Supported by NYUCD start-up funds.

*T. BALABEGIANS, Z. KURAGO, and L. RAMANATHAPURAM, New York University, New York, NY*

## 1449 Oral Cancer and Stromal Cells as Contributors of Inflammatory Factors

---

**Friday, March 5, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129792

### Poster Session

Monocytes-macrophages, cytokine interleukin (IL)-6 and chemokine CCL2 present in the oral squamous cell carcinoma (OSCC) microenvironment are associated with cancer progression. IL-6 contributes to cancer cell survival, while CCL2 is required to recruit monocytes, which are potent producers of IL-6 when stimulated with microbial products, and bacteria were shown to colonize the OSCC microenvironment. IL-6 was also shown to induce CCL2 production in monocytes. The sources of IL-6 and CCL2 in OSCC microenvironment have not been characterized. Our prior studies revealed that most OSCC cell lines produced little to none CCL2 and IL-6, while two primary oral fibroblast lines produced both factors, suggesting that stromal cells in OSCC may be more reliable sources of CCL2 and IL-6. The

**Objective:** of this study was to expand analysis of IL-6 and CCL2 production to additional OSCC cells, keratinocytes and fibroblasts.

**Methods:** A panel of two primary normal oral fibroblast lines, four OSCC cell lines, and normal oral keratinocytes were plated at  $1 \times 10^5$  cells/ml and stimulated for 48 hrs with IL-6 or bacterial products lipopolysaccharide (LPS) and/or Pam<sub>3</sub>CysSerLys<sub>4</sub>. Secretion of IL-6 and CCL2 was measured in the supernatants by ELISA (R&D Systems; e-Bioscience).

**Results:** Three out of four OSCC lines produced varying amounts of IL-6, but CCL2 was not detected in any OSCC, with or without stimulation. In contrast, both fibroblast lines produced IL-6 and CCL2, which increased significantly with bacterial stimulation, but not in response to IL-6. Primary oral keratinocytes made some IL-6 and CCL2 without responding to bacterial products or to IL-6.

**Conclusion:** Together with our previous data, these results support our hypothesis that in the OSCC microenvironment, the stromal cells rather than OSCC cells are the more likely sources of IL-6 and CCL2, factors associated with cancer progression.

Supported by NYUCD Dean's Student Research Award.

*T. BERTRAND<sup>1</sup>, L. RAMANATHAPURAM<sup>2</sup>, and Z. KURAGO<sup>2</sup>, <sup>1</sup>New York University, Great Falls, VA, <sup>2</sup>New York University, New York, NY*

## 1109 Effect of Drilling Speed on Early Integration of Endosseous Implants

---

**Friday, March 5, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129955

### Poster Session

**Objective:** to evaluate the early integration of endosseous implants of alumina-blasted/acid-etched (AB/AE) and calcium-phosphate (CaP) surfaces as a function of surgical drilling speed.

**Methods:** 64 implants were bilaterally placed in the radii of 8 beagle dogs and remained for 2 and 4 weeks in vivo. Half the implants were AB/AE, and the other half CaP surfaces. Half of the implants of both surfaces were placed under 50 rpm drilling speed without saline irrigation and the other half were placed under 900 rpm drilling speed under abundant irrigation. After euthanasia, the implants in bone were nondecalcified processed and referred for histologic analysis and bone-to-implant contact (BIC) and bone area fraction occupancy (BAFO) determination. Statistical analyses were performed by ANOVA considering implant surface, time in vivo, and drilling speed as independent variables, and BIC BAFO as the dependent variable.

**Results:** both techniques led to early implant integration and intimate contact between bone and both implant surfaces. A significant increase in BIC and BAFO was observed as time elapsed from 2 to 4 weeks, and for the CaP implant surface.

**Conclusion:** Surgical drilling technique did not affect the early integration of AB/AE and CaP implant surfaces at early implantation times.

*G. GIRO<sup>1</sup>, C. MARIN<sup>2</sup>, R. GRANATO<sup>3</sup>, E. BONFANTE<sup>4</sup>, M. SUZUKI<sup>5</sup>, and P. COELHO<sup>4</sup>, <sup>1</sup>Universidade Estadual Paulista - UNESP, Araraquara, Brazil, <sup>2</sup>Universidade Federal de Santa Catarina, Lages, Brazil, <sup>3</sup>Universidade Federal de Santa Catarina, Florianopolis, Brazil, <sup>4</sup>New York University, New York, NY, <sup>5</sup>Tufts University School of Dental Medicine, Boston, MA*

## 1092 Maternal influence on *S.mutans* colonization and ECC in Thai children

---

Friday, March 5, 2010: 3:30 p.m. - 4:45 p.m.

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 128892

### Poster Session

A positive correlation is established between maternal socio-behavioral factors and the development of early childhood caries (ECC).

**Objectives:** To examine potential biological associations between the mode of delivery and other maternal factors with the colonization of *S. mutans* and caries experience in a group of Thai children.

**Methods:** A total of 350 mothers and their 3- or 5-year-old children were randomly selected (185 were born vaginally; 165 were born by cesarean section). Caries experiences of the mothers and children were examined. *S. mutans* colonization was assessed by using Dentocult® SM Strip Mutans method (Orion Diagnostica) and quantitative real-time PCR. Information on childcare history, dietary and oral health practices were obtained by a questionnaire survey of the mothers.

**Results:** Overall, an association was found between *S. mutans* colonization and ECC prevalence in the Thai children ( $p < 0.001$ ). Very high *S. mutans* colonization (Strip mutans score = 3) was found in 3-year-old (49%) vaginally-born children ( $p = 0.018$ ), who also experienced more caries with a higher mean dmfs score compared with age-matched cesarean born children ( $p < 0.001$ ). Other maternal factors significantly associated with more caries in the children included chewing food to feed her child ( $p = 0.002$ ) and bottle feeding at bed time ( $p = 0.04$ ).

**Conclusions:** These results demonstrate that the mode of delivery and feeding practices were related to the early establishment of *S. mutans* and caries status in the Thai children population. This information is important to our understanding of the mother-child relationship in cariogenic bacterial transmission and ECC outcomes.

Supported by grants from the Faculty of Dentistry of Chiang Mai University; the New York University College of Dentistry Dean's Award for Student Research; New York Academy of Dentistry; and additional funds from Colgate-Palmolive.

*P. GOODARZI*<sup>1</sup>, *P. SARAI THONG*<sup>2</sup>, *Z. CHEN*<sup>1</sup>, *N. CHHUN*<sup>1</sup>, *K. PATTANAPORN*<sup>2</sup>, *S. KHONGKHUNTHIAN*<sup>2</sup>, *P. LAOHAPENSANG*<sup>3</sup>, and *Y. LI*<sup>1</sup>, <sup>1</sup>New York University, New York, NY, <sup>2</sup>Chiang Mai University, Chiang Mai, Thailand, <sup>3</sup>Health Promotion Hospital, Chiang Mai, Thailand

## 1110 In Vivo Evaluation of Nanometer Scale Roughness Surfaces

---

**Friday, March 5, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129963

### Poster Session

**Objective:** The objective of the present study was to evaluate the early biomechanical fixation and bone-to-implant contact of a CaP- and a silica-based blasting media for obtaining nanometer roughness scale surface texturing in a canine model.

**Methods:** The surfaces were prepared by CaP and silica-based blasting media, and were characterized by FE-SEM, XPS, and AFM. The different surfaces were bilaterally placed in a 3.2mm osteotomy in the proximal tibia of 6 dogs, remaining for 2 and 4 weeks in vivo (4 per limb). Following euthanasia, half the implants were torqued to interface failure and the other half were nondecalcified processed for bone-to-implant contact determination. Statistical analysis was performed at 95% confidence level by ANOVA considering BIC and Torque as dependent variables and implant surface and time in vivo as independent variables.

**Results:** Nanometer scale texturization was observed for both groups, and XPS analysis showed Ca and P was only observed for the CaP-blasted surface. Time in vivo and implant surface did not have an influence in torque ( $p > 0.12$  and  $p > 0.58$ , respectively). While implant surface did not have an effect in BIC ( $p > 0.32$ ), a significant increase was observed in BIC from 2 to 4 weeks ( $p < 0.04$ ). No differences in bone morphology was observed between groups, and both surfaces were biocompatible and osseointegrative.

**Conclusion:** Despite the different blasting media utilized and final surface chemistry, no differences were observed in measurable biomechanical and histomorphometric parameters at early times in vivo.

*S. LIN<sup>1</sup>, R. GRANATO<sup>2</sup>, C. MARIN<sup>3</sup>, E. BONFANTE<sup>1</sup>, M. SUZUKI<sup>4</sup>, and P. COELHO<sup>1</sup>, <sup>1</sup>New York University, New York, NY, <sup>2</sup>Universidade Fedederal de Santa Catarina, Florianopolis, Brazil, <sup>3</sup>Universidade Fedederal de Santa Catarina, Lages, Brazil, <sup>4</sup>Tufts University School of Dental Medicine, Boston, MA*

## 1007 Gene Expression in Osteoblasts Cultured with Collagen Membranes

---

**Friday, March 5, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129086

### Poster Session

**Objectives:** Although resorbable collagen membranes have been widely used for periodontal and implant surgery, we do not still fully understand the molecular effects of the membranes on cells. The aim of this study is to investigate gene expression levels of bone-related matrix in preosteoblasts cultured with resorbable collagen membranes.

**Methods:** Two commercially available collagen membranes were tested; Ossix Plus (OP, OraPharma, GLYMATRIX cross-linked porcine type I collagen), OsseoGuard (OG, Biomet 3i, noncross-linked bovine type I collagen). MC3T3-E1 mouse preosteoblasts were cultured with OP or OG collagen membrane. The cell culture without membranes was used for the control. After 2-day culture, the cells were collected, and key osteogenic and extracellular matrix gene expressions (BMP-2, type II collagen, osteopontin, and Runx2) were analyzed by quantitative real-time PCR.

**Results:** With OP membrane, gene expression levels of BMP-2, type II collagen, osteopontin, and Runx2 slightly decreased compared to the control, but the differences were not significant. With OG membrane, although gene expression levels of BMP-2 slightly increased and of type II collagen and Runx2 slightly decreased compared to the control, the differences were not significant. However, only osteopontin expression level in osteoblasts with OG membrane significantly decreased compared to the control.

**Conclusion:** In 2-day cultured preosteoblasts, collagen membranes had little effect on gene expression levels of bone-related matrix, except osteopontin inhibited with OG membrane

*T. LIN, New York University, New York, NY, and S. YAMANO, NYU College of Dentistry, New York, NY*

## 1142 Rapid Quantification by ELISA of the Activated Tumor Suppressor BAX

---

**Friday, March 5, 2010: 3:30 p.m. - 4:45 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129722

### Poster Session

Apoptosis, or programmed cell death, is a process that is essential to tissue homeostasis. Therefore, a dysregulation of apoptosis is associated with diseases such as oral cancer. The commitment step of the apoptotic cascade is considered to be the release of cytochrome c from mitochondria. Cytochrome c release is mediated by the tumor suppressor protein BAX. BAX activation leads to the exposure of BAX N-terminus which is essential for the formation a cytochrome c release channel, i.e. the Mitochondrial Apoptosis-induced Channel (MAC). Purpose: To develop an ELISA (Enzyme-Linked ImmunoSorbent Assay) based technique that allows the specific quantification of the activated form of the BAX protein. Specific quantification of activated BAX allows for the determination of an early apoptotic index.

**Methods:** The ELISA was developed using antibodies that specifically bind to the N-terminus of BAX. Samples containing different amounts of activated recombinant human BAX were used as standards. The specificity of the antibodies was tested and confirmed through their ability to specifically immunoprecipitate activated BAX. Apoptotic and non-apoptotic biological samples, such as mitochondrial and total cell protein extracts, were then tested with the ELISA.

**Results:** This ELISA allowed a specific detection and quantification of the activated form of recombinant BAX and reproducible BAX standard curves were attained. Quantification of activated BAX in mitochondrial and total cell extracts was also possible using this technique. Similarly, the same antibodies allowed the immunoprecipitation of the activated form of BAX in samples containing either recombinant or native BAX.

**Conclusion:** Currently, there is no known method that specifically allows the quantification of the activated form of the BAX protein, a potential biomarker for early apoptosis. Our ELISA method could represent a new diagnostic tool for early screening of diseases associated with the dysregulation of apoptosis, such as oral cancer.

*A. VILLAMAYOR, O. TEJIDO, and L. DEJEAN, New York University, New York, NY*

## 1228 Strength and Fracture Behavior of Alumina-Glass Graded Restorative Material

---

**Saturday, March 6, 2010: 9 a.m. - 10:30 a.m.**

- ✓ Location: Room 150B (Walter E. Washington Convention Center)
- ✓ Abstract 128485

### Oral Session

**Objectives:** Alumina is valuable dental restorative material, but improvements in fracture strength and aesthetics extend its clinical value. Bulk fracture due to repeated loading may be avoided through careful arrangement of engineering properties. We have developed a novel alumina-glass composite material, which exhibits an increase in material strength while also creating a more aesthetically acceptable surface. This study investigates the strength of alumina-glass graded composites in comparison with monolithic alumina samples.

**Methods:** Disks (d=20 t=1.5mm) of alumina-glass composite were fabricated by infiltration of a silica-based glass powder into commercial alumina disks at 1550°C for time periods of 1, 2, and 3 hours. These composite disks were polished to a surface finish of .5mm. The strength of the alumina-glass disks was measured using a modified biaxial arrangement. Ceramic disks were bonded to polycarbonate substrate (12.5mm thick) with a resin epoxy. Load was applied using a round indenter (r=3.18mm) mounted on a universal mechanical testing machine at a rate of 1mm/min. Critical loads for the onset of flexural fracture were recorded at a drop in load on the load displacement curve. Results were compared to monolithic alumina samples.

**Results:** Alumina-glass samples showed a marked improvement in strength over the monolithic alumina. The samples infiltrated for 2 hours showed the most improvement in strength, an average of 58% over the monolithic alumina. Radial cracking at the lower surface of the disk appears to have initiated material failure.

*continue*

	Monolith	1550°C, 1h	1550°C, 2h	1550°C, 3h
Mean Strength (N)	797.7	1116.96	1260.01	1189.78
STDEV (N)	181.14	161.57	237.28	102.97

**Conclusions:** Graded alumina-glass composites displayed increased strength compared to monolithic alumina. This is due to maximum tensile stress being transmitted from the material surface to the interior. The glass surface may also provide some protection from surface flaws.

Supported by NIH/NIDCR-R01DE017925 and NSF/CMMI-0758530.

*E. DORTHÉ, New York University, New York, NY, J.W. KIM, New York University, College of Dentistry, Department of Biomaterials and Biomimetics, New York, NY, and Y. ZHANG, New York University College of Dentistry, New York, NY*

## 1334 Self v Light Cure Composite Cement Bonding to Core Composite

---

**Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129800

### Poster Session

Composite cement is utilized to secure posts into root surfaces and then frequently excess cement is left as final composite core is placed. Little is known about the bond strength of composite core to the polymerized cement.

**Objectives:** Determine the effect of light polymerization or auto polymerization of dual-cured resin cement on the bond strength of composite core material to the cement.

**Methods:** Twenty specimens of dual-curing self adhesive resin cement (Relyx Unicem 3M-ESPE, St Paul MN ) were prepared, 10 self-cured for 15min and 10 light-cured for 40s. A 2.38 mm column of composite (Filtek Supreme, 3M-ESPE) was placed, on the cement, cured for 20s, subjected to a shear force at a crosshead speed of 0.5mm/min on an Instron testing machine (Canton, MA) and force at failure recorded. Mean bond strength values were calculated in MPa(+s.d.) and data evaluated for statistical significance by a standard two-tailed T-test.

**Results:** The bond of light cured cement to composite had a mean bond strength of 7.9 MPa (+ 6.3), and auto-cured cemented to composite of 15.5 MPa (+ 5.9) with  $p \leq .013$ .

**Conclusion:** The bond strength of dual-cured resin was effected by polymerization technique. Light cured composite to core bond strength is considerably less than the dentin to composite bond strength reported in other studies. Excess cement should be removed from post prior to placement of a composite core to allow bonding directly to the dentin surrounding the post.

*A. AKHTAR, A. WOJCIK, M. PRAGER, and M.S. WOLFF, New York University College of Dentistry, New York, NY*

## 1274 The Role of Corticosteroids in Today's Dentistry

---

**Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.**

- ✓ Location: Room 145A (Walter E. Washington Convention Center)
- ✓ Abstract 129090

### Discussion Session

**Objective:** This article addresses the new researched benefits of pharmaceutical glucocorticoids in dentistry, recommended protocols and dosage, possible negative effects of administered corticosteroids and contraindications of their use.

**Methods:** We consulted three textbooks: Vander Human Physiology, Dental Management of the Medically Compromised Patient, and Basic & Clinical Pharmacology, and conducted a review of the literature using Pubmed as search engine (focusing our search mostly to the last 10 years).

**Results:** This systematic review demonstrates that glucocorticoids due to their anti-inflammatory effects can be very beneficial in oral and maxillofacial surgeries. For example, research has shown that prescribed glucocorticoids can be used in limiting the post-operative edema after major oral surgeries. Also many recent studies have been done demonstrating the benefits of using corticosteroids for patients with complicated root canal therapy. For example, several recent clinical trials have been done on patients diagnosed with irreversible pulpitis. The results demonstrate that injecting dexamethasone around the tooth was associated with less frequent pain at 6, 12 and 24 hour intervals after the appointment compared to the placebo group.

To achieve the optimal results from prescribed steroids the clinician must follow the proper dose and timing. Therefore, this article also contains the recent clinical recommendations and protocols listed in articles published in the past 30 years.

**Conclusion:** Pharmaceutical glucocorticoids have many beneficial effects in medical and dental treatments. However, they should not be routinely administered after every dental treatment that may result in postoperative edema and pain. Rather, its use should be reserved for selected cases where the benefits outweigh the risks. As indicated in this paper, clinical research indicates that the use of exogenous glucocorticoids add to patient comfort and ultimately increases the satisfaction with the dental procedure.

*N. DEYHIM, and M. MCANDREW, New York University, New York, NY*

## 1298 Fatigue Behavior of Glass-infiltrated Functionally Graded Zirconia under Simulated Mastication

---

**Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 130128

### Poster Session

**Objectives:** Recent study showed that functionally graded glass/zirconia/glass (GZG) structures displayed increased flexural strength compared to homogeneous zirconia (Y-TZP). This study investigates fatigue damage resistance of G/Z/G relative to homogeneous Y-TZP.

**Methods:** GZG plates (1.2x1.2x0.55 mm) were fabricated by glass infiltration at 1450 °C for 2 h. These graded glass-zirconia plates were polished to 1 μm finish and bonded onto composite blocks (15x15x4 mm, Z100™, 3M ESPE). Fatigue loading were performed on GZG/composite bilayers with a spherical tungsten carbide indenter (r=1.5 mm) using a mouth-motion simulator (Elf 3300, EnduraTEC, Minnetonka, MN) in water. Specimens were positioned at inclination angle (30°) with respect to load axis. Load was applied in the vertical direction with a contact-load-slide-liftoff profile. The applied fatigue load varied from 200 to 650 N with 4 specimens for each prescribed load. Parallel studies were conducted on homogeneous Y-TZP control. All specimens were subjected to post mortem damage examination by combined optical microscopy and a sectioning technique.

**Results:** Both GZG and Y-TZP showed similar damage modes. Deep penetrating partial cone cracks were observed at the occlusal surface near the contact area, while flexural radial cracks were evident at the ceramic/composite interface. The radial fracture dominated at the high loads (>400N), while partial cones in the low loads. However, significantly higher loads and larger number of cycles were required to initiate both cone and radial cracks in graded GZG structure compared to monolithic Y-TZP. In addition, partial cone cracks were not be able to propagate deep in GZG.

**Conclusion:** Graded GZG exhibited improved resistance to cyclic fatigue damage compared to homogeneous The surface of zirconia is graded with a lower modulus glass that the contact fatigue damage resistance of functionally graded zirconia structure can be improved.

Supported by NIH/NIDCR-R01DE017925 and NSF/CMMI-0758530.

*J.W. KIM, New York University, College of Dentistry, Department of Biomaterials and Biomimetics, New York, NY, and Y. ZHANG, New York University College of Dentistry, New York, NY*

## 1507 Dentin Caries Activity in Occlusal RBC Restorations: PEARL Network Findings

Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 131147

### Poster Session

**Objective:** To determine dentin caries (DC) activity and relate it to preparation characteristics and lesion radiographic visibility.

**Methods:** As part of a study of hypersensitivity associated with Class I resin-based composite (RBC) restoration of posterior teeth, 45 PEARL Network Practitioner-Investigators enrolled 613 patients with early/shallow caries (<1/2 dentin thickness if visible on radiograph) and restored lesions (n=682; 88% on molars). Upon opening the enamel, dentists ranked the exposed DC using a scale modified from Kidd et al. (1993): 1, soft, serous; 2, soft, dry; 3, soft, dry, granular; 4, leathery; 5, firm but discolored. Following caries removal, dentists recorded preparation depth, length, and width (to the nearest mm) and restorative materials and techniques. Chi-square analysis was used to determine the relationship between patient age, tooth radiographic lesion visibility, and DC activity ranking, the Wilcoxon test for the relationship between cavity depth, cavity volume, and DC activity.

**Results:** Patient female/male ratio was 1.44:1. Active DC activity (ranking 1 or 2) was present in 38.4% (259/675) of teeth, while 18.5% were ranked 3, 18.7% as 4, and 24.4% as 5; activity was not related to patient age. Visibility on radiograph (41.3%, 271/656) was associated ( $p < .01$ ) with active DC. Cavity depth was significantly greater for active DC ( $3.8 \pm 1.3$  mm) than inactive DC ( $3.3 \pm 1.2$  mm;  $p < .01$ ); cavity volume for active DC ( $55.1 \pm 47.7$  m<sup>3</sup>) was greater than for inactive DC ( $38.1 \pm 34.5$  m<sup>3</sup>;  $p < .01$ ). DC activity ranking (predominantly inactive: rankings 3-5) was identical in 64.6% (42/65) of patients with 2 teeth prepared (in different quadrants).

**Conclusions:** Active dentin caries, while present in only 38.4% of lesions, was related to lesion radiographic visibility (but not to patient age). Based on the low level of active DC, remineralization or sealing vs. operative treatment of early/shallow occlusal lesions is advised, particularly absent radiographic visibility.

Supported by NIDCR U01-DE016755.

M. LEHMANN<sup>1</sup>, A. VEITZ-KEENAN<sup>1</sup>, R. CRAIG<sup>1</sup>, F. CURRO<sup>1</sup>, V. THOMPSON<sup>1</sup>, J. WU<sup>2</sup>, and D. VENA<sup>2</sup>,  
1PEARL Network, New York University College of Dentistry, New York, NY, 2EMMES Corporation,  
Rockville, MD

## 1424 Effect of Protease Inhibitors on Assessment of Oral Microbes

---

**Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 128714

### Poster Session

Commercially available protease inhibitor (PIs) cocktails have been routinely added to clinical samples for proteomic studies. However, it has been reported that several PIs are a potent inhibitor of bacterial growth and proliferation.

**Objectives:** To determine if Halt™ Protease Inhibitor Cocktail (Thermo, Rockford) interfere quantitatively and qualitatively with the analysis of total cultivable and uncultivable bacterial colonization in the saliva.

**Methods:** Twenty-two stimulated whole saliva samples were obtained and processed immediately with and without PIs added. Conventional cultivation method was used to evaluate cultivable bacterial growth measured by total colony-forming units (CFU) with a non-selective enrichment medium and three selective media. Meanwhile, total bacterial genomic DNA was isolated from the saliva samples; a targeted 16S rRNA fragment was amplified and separated by denaturing gradient gel electrophoresis (DGGE). Total cultivable and uncultivable bacterial composition profiles were obtained.

**Results:** There was no significant difference in the mean CFU counts between the PIs and non-PIs groups. We also observed a high degree of correlation between the paired samples for total cultivable microbiota ( $r_2 = 0.867$ ), total mutans streptococci ( $r_2 = 0.898$ ), total oral lactobacilli ( $r_2 = 0.933$ ), and total *Streptococcus mutans* ( $r_2 = 0.870$ ). The PIs and non-PIs groups shared as much as 95.7% of similarity in total bacterial composition. Meanwhile, proteomic analysis of saliva also showed that commercial protease inhibitors have no significant effect on the integrity of saliva proteins.

**Conclusions:** These results demonstrated that the addition of PIs in the saliva sample for proteomic analysis has no significant effect on the evaluation of total microbial cultivation and diversity.

Supported by research grants U19 DE018385, DE013937, and DE015706 from NIH/NIDCR.

*G. LIU1, D. SAXENA1, Z. CHEN1, H. DENG2, R.G. NORMAN1, D. MALAMUD1, and Y. LI1, 1New York University, New York, NY, 2Rockefeller University, New York, NY*

## 1296 Effects of Cold Air Plasma on Biofilm Formation

---

**Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129636

### Poster Session

The development of a novel therapeutic approach to disrupt the formation and virulence of dental biofilms is a challenging and promising route to prevent or reduce oral infectious diseases.

**Objective:** The aim of the present study was to investigate the influence of cold air plasma treatment on the formation and killing of biofilms.

**Methods:** The treatments were made using a portable air plasma torch, a non-thermal gas plasma source, operated at a 60Hz periodic mode. The corresponding density and flux of atomic oxygen were estimated to be about  $10^6 \text{cm}^{-3}$  and  $4 \times 10^9 \text{cm}^{-2} \text{s}^{-1}$ , respectively. *Streptococcus mutans* UA159 biofilms were formed on saliva-coated hydroxyapatite discs in batch culture at 37°C, 5% CO<sub>2</sub>. Tryptone-yeast extract broth containing 1% sucrose was changed daily. The biofilms were treated by the following conditions: 1) Twice daily with air plasma torch (30s) for 4 days during biofilm formation; and 2) After the 5th day, the mature biofilm was treated for 30s with air plasma torch. Control samples were treated using air only, without the plasma, at the same flow rate (conditions 1 and 2). After the treatments, the biofilms (n=12) were harvested for: A) Bacterial viability, B) Dry-weight, C) Extracellular soluble and insoluble polysaccharides content and structure; D) Intracellular polysaccharide determinations and E) Architecture analyses by environmental scanning electron microscope (ESEM).

**Results:** The treatment with air plasma torch during biofilm formation remarkably reduced the biofilm biomass (<72%) and amount of polysaccharides (<75%) when compared to the control group (p<0.05). The bacterial viability in mature biofilm was also affected by the air plasma treatment with 99.9% killing. Furthermore, the biofilm matrix development, structure and architecture were markedly affected by air plasma treatment.

**Conclusions:** The cold air plasma represents a novel, nonthermal, and portable technology to be used for reducing microbial biofilm formation and to disrupt the already mature biofilm on surfaces.

Supported by NYUCD/NYU-Poly seed funds.

*R.M. MURATA<sup>1</sup>, C.Y. CHEN<sup>2</sup>, S. KUO<sup>2</sup>, D. SAXENA<sup>1</sup>, and S. DUARTE<sup>1</sup>, <sup>1</sup>New York University, College of Dentistry, New York, NY, <sup>2</sup>New York University, Polytechnic Institute of NYU, New York, NY*

## 1418 Characterization Of Bacterial Nuances In Oral Squamous Cell Carcinoma Tissues

---

**Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 130001

### Poster Session

Oral squamous cell carcinoma (OSCC) is sixth most prevalent cancer in United States and constitutes ~90% of oral cancer. The overall 5-year survival rate of 50% has not improved in past several decades. OSCC are usually associated with tobacco use, alcohol consumption and independent factors like poor oral hygiene, periodontitis, infection with viruses and Candida species. Studies have shown involvement of bacteria in cancer progression through persistent infection, inflammation, immuno- and pathological alterations. Oral cavity anchors diversified microflora and assessing bacterial disturbances if any, using high throughput technologies can provide better insight in understanding their role in carcinogenesis.

**Objective:** The purpose of this study was to investigate the altered bacterial dynamics in OSCC and normal mucosal tissues. **Method:** A total of 12 samples, 6 each from two subsets; OSCC of oral tongue and floor of mouth and normal mucosal tissues, 3-5 cm distant from tumor area or contra-lateral side were evaluated from patients (n=6). Bacterial genomic DNA was extracted from tissue specimens and bacterial population dissected using 16S rDNA identification system and denaturing gradient gel electrophoresis (DGGE).

**Results:** A protocol for total genomic DNA extraction from tissue samples was standardized. 16S rDNA gene sequences were successfully amplified applying universal eubacterial primers. The bacterial phylotypes identified were to some extent different for tumorigenic tissues compared to normal tissue. Profile analysis of DGGE reflected approximately 30-35 discrete bands of varying intensities in tissue samples.

**Conclusion:** OSCC and normal tissue specimens showed bacterial presence of known, culturable, non-culturable and unclassified species. The variable bacterial fingerprinting pattern in tumorous and non-tumorous tissues indicates some microbial switch over. Few selective species dominated the tumor samples may have their relevance to inflammation and may find its application as diagnostic marker in early prognosis of oral cancer.

This work was supported by NYU Faculty Research Funds.

*S. PUSHALKAR<sup>1</sup>, X. JI<sup>2</sup>, Y. LI<sup>1</sup>, C. ESTILO<sup>3</sup>, and D. SAXENA<sup>1</sup>, <sup>1</sup>New York University College of Dentistry, New York, NY, <sup>2</sup>Polytechnic Institute of New York University, New York, NY, <sup>3</sup>Memorial Sloan Kettering Cancer Center, Dental Service, Department of Surgery, New York, NY*

## 1497 *H. pylori*, Periodontal Pathogens, and Risk Factors of Gastric Cancer

---

**Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 131087

### Poster Session

Gastric cancer is the second most common malignancy worldwide. Previously, epidemiologic studies have suggested a positive association between self-reported tooth loss and the risk of gastric cancer. However, the mechanism underlying this association remains under question.

**Objectives:** We are conducting a case-control study to evaluate the association between major pathogens of periodontal disease and the risk of gastric cancer precursor lesions.

**Methods:** All of the cases and controls were identified from participants undergoing upper gastrointestinal endoscopy in Bellevue Hospital Center in New York City. Presence and pathogen burden of *Porphyromonas gingivalis* (Pg), *Tannerella forsythensis* (Tf), *Treponema denticola* (Td), and *Actinobacillus actinomycetemcomitans* (Aa) in the saliva and plaque samples were measured using quantitative real-time PCR. *Helicobacter pylori* colonization was examined in serum. In the first 30 participants, we evaluated associations between conventional risk factors of gastric cancer and presence of the four major pathogens of periodontal disease.

**Results:** Presence of Tf, Td were significantly associated with older age ( $p < 0.01$ ); presence of Td was negatively associated with cigarette smoking status ( $p = 0.04$ ). *H. pylori* measured in serum was positively associated with pathogen burden of Aa in the plaque samples ( $p = 0.02-0.07$ ).

**Conclusion:** The findings suggest that age, smoking status, and *H. pylori* colonization may be important confounders in assessing relationship between pathogens of periodontal disease and the risk of gastric cancer or precursor lesions.

Supported by research grants R21DE018438 and U19DE018385 from NIH/NIDCR.

*J. SUN1, Y. LI1, F. FRANCOIS2, P. CORBY1, A.P. DASANAYAKE1, and Y. CHEN2, 1New York University College of Dentistry, New York, NY, 2New York University School of Medicine, New York, NY*

# 1396 Effect of Starch and Sucrose on Biofilm Composition and Acidogenicity

---

**Saturday, March 6, 2010: 11:45 a.m. - 1 p.m.**

- ✓ Location: Exhibit Hall D (Walter E. Washington Convention Center)
- ✓ Abstract 129484

## Poster Session

**Objective:** To determine the interactions of sucrose, alone or in combination with starch or glucose, in the presence of human salivary amylase on mutans streptococci biofilm composition and acidogenicity.

**Material and Methods:** Biofilms of *S. mutans* were formed in tryptone yeast extract (TYE) broth containing: i) 1% sucrose, ii) 1% sucrose + 0.5% glucose, iii) 1% sucrose + 0.5% starch. In each group, TYE was mixed with sterile saliva, which contains amylase, in 1:1 ratio; TYE and Absorption Buffer was used as negative control. *S. mutans* biofilms were formed on glass slides in batch culture for 3 days. All the groups were kept in 5% CO<sub>2</sub>, 37° C and media + saliva was replaced daily. After 3 days, the biofilms were harvested for: A) Dry-weight, B) Alkali Soluble Polysaccharides (ASP); C) Extracellular soluble polysaccharides; D) Intracellular polysaccharide (IPS) and E) Total DNA content.

**Results:** The constant presence of salivary amylase showed increment in availability of reducing sugars during biofilm development. Biofilms grown in all groups had pH values lower than 4.5 within the first day, and specifically the biofilm that had grown in sucrose + starch recorded the highest acid production in the shortest time period. Within saliva (amylase) groups, sucrose + starch had the highest amount of ASP (2066.5 µg/mg biofilm) compared to sucrose alone (955.13 µg/mg biofilm) or sucrose + glucose (1467.21 µg/mg biofilm). And also IPS was highest in sucrose + starch (237.5 µg/mg biofilm) compared to sucrose alone (117.575 µg/mg biofilm) or sucrose + glucose (131.05 µg/mg biofilm)

**Conclusions:** The combination of sucrose and starch has been the most suitable environment for *S. mutans*, and we conclude that this combination, in the constant presence of salivary amylase, could enhance the cariogenic potential of dental biofilms.

*K. YANG, R. MURATA, and S. DUARTE, New York University, New York, NY*



AADR NYUCD

**AT A GLANCE**

**LISTINGS**



## At a Glance: Sorted by Paper Title

#	Paper Title	Date	Abstract ID	Start Time	End Time	Type
1	Caries Management by Risk Assessment – What's the Evidence?	Thursday, March 4, 2010	127489	12:15 p.m.	1:30 p.m.	Lunch and Learning
2	Characterization Of Bacterial Nuances In Oral Squamous Cell Carcinoma Tissues	Saturday, March 6, 2010	130001	11:45 a.m.	1 p.m.	Poster Session
3	Characterization of Satellite Cells from Rats and Expanded in Culture	Friday, March 5, 2010	128795	10:45 a.m.	12:15 p.m.	Oral Session
4	Dentin Caries Activity in Occlusal RBC Restorations: PEARL Network Findings	Saturday, March 6, 2010	131147	11:45 a.m.	1 p.m.	Poster Session
5	Determination of Free Fluoride in 20 International Toothpastes	Thursday, March 4, 2010	129726	3:30 p.m.	4:45 p.m.	Poster Session
6	Effect of Calcium/phosphate Paste on Dentin and Enamel Bond Strengths	Friday, March 5, 2010	129794	2 p.m.	3:15 p.m.	Poster Session
7	Effect of Desensitizing Toothpaste on Dentin Bond Strength	Friday, March 5, 2010	129436	2 p.m.	3:15 p.m.	Poster Session
8	Effect of Drilling Speed on Early Integration of Endosseous Implants	Friday, March 5, 2010	129955	3:30 p.m.	4:45 p.m.	Poster Session
9	Effect of HIV infection and HAART on Oral Bacterial Colonization	Thursday, March 4, 2010	128939	3:30 p.m.	4:45 p.m.	Poster Session
10	Effect of Protease Inhibitors on Assessment of Oral Microbes	Saturday, March 6, 2010	128714	11:45 a.m.	1 p.m.	Poster Session
11	Effect of Starch and Sucrose on Biofilm Composition and Acidogenicity	Saturday, March 6, 2010	129484	11:45 a.m.	1 p.m.	Poster Session
12	Effects of Cold Air Plasma on Biofilm Formation	Saturday, March 6, 2010	129636	11:45 a.m.	1 p.m.	Poster Session
13	Effects of Compositional Changes on Properties of Calcium Phosphate Glass	Thursday, March 4, 2010	129529	3:30 p.m.	4:45 p.m.	Poster Session
14	Effects of Sterilization Methods on Composite-to-Dentin Shear Bond Strengths	Thursday, March 4, 2010	129905	3:30 p.m.	4:45 p.m.	Poster Session
15	Evaluating Bone Microbiota In Bisphosphonate Related Osteonecrosis Of The Jaw	Thursday, March 4, 2010	129909	3:30 p.m.	4:45 p.m.	Poster Session
16	Fatigue Behavior of Glass-infiltrated Functionally Graded Zirconia under Simulated Mastication	Saturday, March 6, 2010	130128	11:45 a.m.	1 p.m.	Poster Session
17	Findings of the CONDOR Case-Control Study of ONJ	Thursday, March 4, 2010	127563	8 a.m.	9:30 a.m.	Symposium
18	Gene Expression in Osteoblasts Cultured with Collagen Membranes	Friday, March 5, 2010	129086	3:30 p.m.	4:45 p.m.	Poster Session
19	H. pylori, Periodontal Pathogens, and Risk Factors of Gastric Cancer	Saturday, March 6, 2010	131087	11:45 a.m.	1 p.m.	Poster Session
20	HIV Status of Women and Dental Caries over 10 Years	Friday, March 5, 2010	129362	2 p.m.	3:15 p.m.	Poster Session
21	In Vivo Evaluation of Nanometer Scale Roughness Surfaces	Friday, March 5, 2010	129963	3:30 p.m.	4:45 p.m.	Poster Session
22	Inter-operator Tooth Color Measurement in Twins using Digital Imaging	Thursday, March 4, 2010	129439	2 p.m.	3:15 p.m.	Poster Session
23	Knowledge and Awareness of Diabetes Mellitus in the NYU Clinic	Friday, March 5, 2010	128672	2 p.m.	3:15 p.m.	Poster Session
24	Lessons Learned from PBRN Studies	Thursday, March 4, 2010	127693	12:15 p.m.	1:30 p.m.	Lunch and Learning
25	Long-Term Resin Bond Strength Of Graded Glass-Zirconia Structures	Thursday, March 4, 2010	130080	3:30 p.m.	4:45 p.m.	Poster Discussion Session
26	Maternal influence on S.mutans colonization and ECC in Thai children	Friday, March 5, 2010	128892	3:30 p.m.	4:45 p.m.	Poster Session
27	Method for Isolation of a Biologically Active Component from OSCC	Friday, March 5, 2010	129608	3:30 p.m.	4:45 p.m.	Poster Session
28	Modified Y-TZP Core Design Improves All-Ceramic Crown Reliability	Thursday, March 4, 2010	129967	8 a.m.	9:30 a.m.	Oral Session
29	New Implant Surfaces and Strategies for Control of Peri-implant Epithelium and Fibrous Tissue Attachment	Thursday, March 4, 2010	127272	12:15 p.m.	1:30 p.m.	Lunch and Learning
30	Oral Cancer and Stromal Cells as Contributors of Inflammatory Factors	Friday, March 5, 2010	129792	3:30 p.m.	4:45 p.m.	Poster Session
31	Organogold(III) Complexes Differentially Induce Apoptosis In Oral Epithelial Cells	Thursday, March 4, 2010	129132	8 a.m.	9:30 a.m.	Oral Session
32	Randomized Controlled Experimental Gingivitis Study of CPC Rinse in Twins	Thursday, March 4, 2010	129405	10:45 a.m.	12:15 p.m.	Oral Session
33	Rapid Quantification by ELISA of the Activated Tumor Suppressor BAX	Friday, March 5, 2010	129722	3:30 p.m.	4:45 p.m.	Poster Session
34	Role of Foxo1 in Bone Formation	Friday, March 5, 2010	129998	2 p.m.	3:15 p.m.	Poster Session
35	Self v Light Cure Composite Cement Bonding to Core Composite	Saturday, March 6, 2010	129800	11:45 a.m.	1 p.m.	Poster Session
36	Sintering and Chemical Characterization of HA/β-TCP Scaffolds	Thursday, March 4, 2010	129555	3:30 p.m.	4:45 p.m.	Poster Session
37	Staining Characteristics of Sports Drinks on Dentin and Enamel	Thursday, March 4, 2010	129708	2 p.m.	3:15 p.m.	Poster Session
38	Strength and Fracture Behavior of Alumina-Glass Graded Restorative Material	Saturday, March 6, 2010	128485	9 a.m.	10:30 a.m.	Oral Session
39	The Role of BAX Translocation in Mitochondrial Dynamics	Thursday, March 4, 2010	129099	3:30 p.m.	4:45 p.m.	Poster Session
40	The Role of Corticosteroids in Today's Dentistry	Saturday, March 6, 2010	129090	11:45 a.m.	1 p.m.	Poster Discussion Session

## At a Glance: Sorted by Session Type

#	Session Type	Date	Start Time	End Time	Paper Title	Abstract ID
1	Lunch and Learning	Thursday, March 4, 2010	12:15 p.m.	1:30 p.m.	New Implant Surfaces and Strategies for Control of Peri-implant Epithelium and Fibrous Tissue Attachment	127272
2	Lunch and Learning	Thursday, March 4, 2010	12:15 p.m.	1:30 p.m.	Lessons Learned from PBRN Studies	127693
3	Lunch and Learning	Thursday, March 4, 2010	12:15 p.m.	1:30 p.m.	Caries Management by Risk Assessment – What's the Evidence?	127489
4	Oral Session	Thursday, March 4, 2010	10:45 a.m.	12:15 p.m.	Randomized Controlled Experimental Gingivitis Study of CPC Rinse in Twins	129405
5	Oral Session	Thursday, March 4, 2010	8 a.m.	9:30 a.m.	Organogold(III) Complexes Differentially Induce Apoptosis In Oral Epithelial Cells	129132
6	Oral Session	Thursday, March 4, 2010	8 a.m.	9:30 a.m.	Modified Y-TZP Core Design Improves All-Ceramic Crown Reliability	129967
7	Oral Session	Friday, March 5, 2010	10:45 a.m.	12:15 p.m.	Characterization of Satellite Cells from Rats and Expanded in Culture	128795
8	Oral Session	Saturday, March 6, 2010	9 a.m.	10:30 a.m.	Strength and Fracture Behavior of Alumina-Glass Graded Restorative Material	128485
9	Discussion Session	Thursday, March 4, 2010	3:30 p.m.	4:45 p.m.	Long-Term Resin Bond Strength Of Graded Glass-Zirconia Structures	130080
10	Discussion Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	The Role of Corticosteroids in Today's Dentistry	129090
11	Poster Session	Thursday, March 4, 2010	2 p.m.	3:15 p.m.	Staining Characteristics of Sports Drinks on Dentin and Enamel	129708
12	Poster Session	Thursday, March 4, 2010	2 p.m.	3:15 p.m.	Inter-operator Tooth Color Measurement in Twins using Digital Imaging	129439
13	Poster Session	Thursday, March 4, 2010	3:30 p.m.	4:45 p.m.	Effect of HIV infection and HAART on Oral Bacterial Colonization	128939
14	Poster Session	Thursday, March 4, 2010	3:30 p.m.	4:45 p.m.	Determination of Free Fluoride in 20 International Toothpastes	129726
15	Poster Session	Thursday, March 4, 2010	3:30 p.m.	4:45 p.m.	Effects of Sterilization Methods on Composite-to-Dentin Shear Bond Strengths	129905
16	Poster Session	Thursday, March 4, 2010	3:30 p.m.	4:45 p.m.	Effects of Compositional Changes on Properties of Calcium Phosphate Glass	129529
17	Poster Session	Thursday, March 4, 2010	3:30 p.m.	4:45 p.m.	The Role of BAX Translocation in Mitochondrial Dynamics	129099
18	Poster Session	Thursday, March 4, 2010	3:30 p.m.	4:45 p.m.	Sintering and Chemical Characterization of HA/ $\beta$ -TCP Scaffolds	129555
19	Poster Session	Thursday, March 4, 2010	3:30 p.m.	4:45 p.m.	Evaluating Bone Microbiota In Bisphosphonate Related Osteonecrosis Of The Jaw	129909
20	Poster Session	Friday, March 5, 2010	2 p.m.	3:15 p.m.	Effect of Desensitizing Toothpaste on Dentin Bond Strength	129436
21	Poster Session	Friday, March 5, 2010	2 p.m.	3:15 p.m.	Effect of Calcium/phosphate Paste on Dentin and Enamel Bond Strengths	129794
22	Poster Session	Friday, March 5, 2010	2 p.m.	3:15 p.m.	Knowledge and Awareness of Diabetes Mellitus in the NYU Clinic	128672
23	Poster Session	Friday, March 5, 2010	2 p.m.	3:15 p.m.	Role of Foxo1 in Bone Formation	129998
24	Poster Session	Friday, March 5, 2010	2 p.m.	3:15 p.m.	HIV Status of Women and Dental Caries over 10 Years	129362
25	Poster Session	Friday, March 5, 2010	3:30 p.m.	4:45 p.m.	Method for Isolation of a Biologically Active Component from OSCC	129608
26	Poster Session	Friday, March 5, 2010	3:30 p.m.	4:45 p.m.	Oral Cancer and Stromal Cells as Contributors of Inflammatory Factors	129792
27	Poster Session	Friday, March 5, 2010	3:30 p.m.	4:45 p.m.	Effect of Drilling Speed on Early Integration of Endosseous Implants	129955
28	Poster Session	Friday, March 5, 2010	3:30 p.m.	4:45 p.m.	Maternal influence on S.mutans colonization and ECC in Thai children	128892
29	Poster Session	Friday, March 5, 2010	3:30 p.m.	4:45 p.m.	In Vivo Evaluation of Nanometer Scale Roughness Surfaces	129963
30	Poster Session	Friday, March 5, 2010	3:30 p.m.	4:45 p.m.	Gene Expression in Osteoblasts Cultured with Collagen Membranes	129086
31	Poster Session	Friday, March 5, 2010	3:30 p.m.	4:45 p.m.	Rapid Quantification by ELISA of the Activated Tumor Suppressor BAX	129722
32	Poster Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	Self v Light Cure Composite Cement Bonding to Core Composite	129800
33	Poster Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	Fatigue Behavior of Glass-infiltrated Functionally Graded Zirconia under Simulated Mastication	130128
34	Poster Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	Dentin Caries Activity in Occlusal RBC Restorations: PEARL Network Findings	131147
35	Poster Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	Effect of Protease Inhibitors on Assessment of Oral Microbes	128714
36	Poster Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	Effects of Cold Air Plasma on Biofilm Formation	129636
37	Poster Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	Characterization Of Bacterial Nuances In Oral Squamous Cell Carcinoma Tissues	130001
38	Poster Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	H. pylori, Periodontal Pathogens, and Risk Factors of Gastric Cancer	131087
39	Poster Session	Saturday, March 6, 2010	11:45 a.m.	1 p.m.	Effect of Starch and Sucrose on Biofilm Composition and Acidogenicity	129484
40	Symposium	Thursday, March 4, 2010	8 a.m.	9:30 a.m.	Findings of the CONDOR Case-Control Study of ONJ	127563

## At a Glance: Sorted by Date

#	Date	Paper Title	Abstract ID	Start Time	End Time	Type
1	Thursday, March 4, 2010	Findings of the CONDOR Case-Control Study of ONJ	127563	8 a.m.	9:30 a.m.	Symposium
2	Thursday, March 4, 2010	Organogold(III) Complexes Differentially Induce Apoptosis In Oral Epithelial Cells	129132	8 a.m.	9:30 a.m.	Oral Session
3	Thursday, March 4, 2010	Modified Y-TZP Core Design Improves All-Ceramic Crown Reliability	129967	8 a.m.	9:30 a.m.	Oral Session
4	Thursday, March 4, 2010	Randomized Controlled Experimental Gingivitis Study of CPC Rinse in Twins	129405	10:45 a.m.	12:15 p.m.	Oral Session
5	Thursday, March 4, 2010	New Implant Surfaces and Strategies for Control of Peri-implant Epithelium and Fibrous Tissue Attachment	127272	12:15 p.m.	1:30 p.m.	Lunch and Learning
6	Thursday, March 4, 2010	Lessons Learned from PBRN Studies	127693	12:15 p.m.	1:30 p.m.	Lunch and Learning
7	Thursday, March 4, 2010	Caries Management by Risk Assessment – What's the Evidence?	127489	12:15 p.m.	1:30 p.m.	Lunch and Learning
8	Thursday, March 4, 2010	Staining Characteristics of Sports Drinks on Dentin and Enamel	129708	2 p.m.	3:15 p.m.	Poster Session
9	Thursday, March 4, 2010	Inter-operator Tooth Color Measurement in Twins using Digital Imaging	129439	2 p.m.	3:15 p.m.	Poster Session
10	Thursday, March 4, 2010	Effect of HIV infection and HAART on Oral Bacterial Colonization	128939	3:30 p.m.	4:45 p.m.	Poster Session
11	Thursday, March 4, 2010	Long-Term Resin Bond Strength Of Graded Glass-Zirconia Structures	130080	3:30 p.m.	4:45 p.m.	Discussion Session
12	Thursday, March 4, 2010	Determination of Free Fluoride in 20 International Toothpastes	129726	3:30 p.m.	4:45 p.m.	Poster Session
13	Thursday, March 4, 2010	Effects of Sterilization Methods on Composite-to-Dentin Shear Bond Strengths	129905	3:30 p.m.	4:45 p.m.	Poster Session
14	Thursday, March 4, 2010	Effects of Compositional Changes on Properties of Calcium Phosphate Glass	129529	3:30 p.m.	4:45 p.m.	Poster Session
15	Thursday, March 4, 2010	The Role of BAX Translocation in Mitochondrial Dynamics	129099	3:30 p.m.	4:45 p.m.	Poster Session
16	Thursday, March 4, 2010	Sintering and Chemical Characterization of HA/β-TCP Scaffolds	129555	3:30 p.m.	4:45 p.m.	Poster Session
17	Thursday, March 4, 2010	Evaluating Bone Microbiota In Bisphosphonate Related Osteonecrosis Of The Jaw	129909	3:30 p.m.	4:45 p.m.	Poster Session
18	Friday, March 5, 2010	Characterization of Satellite Cells from Rats and Expanded in Culture	128795	10:45 a.m.	12:15 p.m.	Oral Session
19	Friday, March 5, 2010	Effect of Desensitizing Toothpaste on Dentin Bond Strength	129436	2 p.m.	3:15 p.m.	Poster Session
20	Friday, March 5, 2010	Effect of Calcium/phosphate Paste on Dentin and Enamel Bond Strengths	129794	2 p.m.	3:15 p.m.	Poster Session
21	Friday, March 5, 2010	Knowledge and Awareness of Diabetes Mellitus in the NYU Clinic	128672	2 p.m.	3:15 p.m.	Poster Session
22	Friday, March 5, 2010	Role of Foxo1 in Bone Formation	129998	2 p.m.	3:15 p.m.	Poster Session
23	Friday, March 5, 2010	HIV Status of Women and Dental Caries over 10 Years	129362	2 p.m.	3:15 p.m.	Poster Session
24	Friday, March 5, 2010	Method for Isolation of a Biologically Active Component from OSCC	129608	3:30 p.m.	4:45 p.m.	Poster Session
25	Friday, March 5, 2010	Oral Cancer and Stromal Cells as Contributors of Inflammatory Factors	129792	3:30 p.m.	4:45 p.m.	Poster Session
26	Friday, March 5, 2010	Effect of Drilling Speed on Early Integration of Endosseous Implants	129955	3:30 p.m.	4:45 p.m.	Poster Session
27	Friday, March 5, 2010	Maternal influence on S.mutans colonization and ECC in Thai children	128892	3:30 p.m.	4:45 p.m.	Poster Session
28	Friday, March 5, 2010	In Vivo Evaluation of Nanometer Scale Roughness Surfaces	129963	3:30 p.m.	4:45 p.m.	Poster Session
29	Friday, March 5, 2010	Gene Expression in Osteoblasts Cultured with Collagen Membranes	129086	3:30 p.m.	4:45 p.m.	Poster Session
30	Friday, March 5, 2010	Rapid Quantification by ELISA of the Activated Tumor Suppressor BAX	129722	3:30 p.m.	4:45 p.m.	Poster Session
31	Saturday, March 6, 2010	Strength and Fracture Behavior of Alumina-Glass Graded Restorative Material	128485	9 a.m.	10:30 a.m.	Oral Session
32	Saturday, March 6, 2010	Self v Light Cure Composite Cement Bonding to Core Composite	129800	11:45 a.m.	1 p.m.	Poster Session
33	Saturday, March 6, 2010	The Role of Corticosteroids in Todays Dentistry	129090	11:45 a.m.	1 p.m.	Discussion Session
34	Saturday, March 6, 2010	Fatigue Behavior of Glass-infiltrated Functionally Graded Zirconia under Simulated Mastication	130128	11:45 a.m.	1 p.m.	Poster Session
35	Saturday, March 6, 2010	Dentin Caries Activity in Occlusal RBC Restorations: PEARL Network Findings	131147	11:45 a.m.	1 p.m.	Poster Session
36	Saturday, March 6, 2010	Effect of Protease Inhibitors on Assessment of Oral Microbes	128714	11:45 a.m.	1 p.m.	Poster Session
37	Saturday, March 6, 2010	Effects of Cold Air Plasma on Biofilm Formation	129636	11:45 a.m.	1 p.m.	Poster Session
38	Saturday, March 6, 2010	Characterization Of Bacterial Nuances In Oral Squamous Cell Carcinoma Tissues	130001	11:45 a.m.	1 p.m.	Poster Session
39	Saturday, March 6, 2010	H. pylori, Periodontal Pathogens, and Risk Factors of Gastric Cancer	131087	11:45 a.m.	1 p.m.	Poster Session
40	Saturday, March 6, 2010	Effect of Starch and Sucrose on Biofilm Composition and Acidogenicity	129484	11:45 a.m.	1 p.m.	Poster Session

