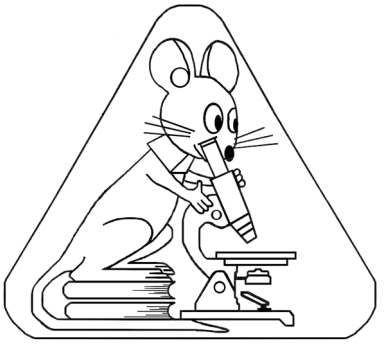
BIOCELL
2013, 37(2): A35 - A79

ISSN 0327 - 9545
PRINTED IN ARGENTINA



TUCUMAN BIOLOGY ASSOCIATION

(Asociación de Biología de Tucumán)

Abstracts from the

XXIX ANNUAL SCIENTIFIC MEETING

October 17-19, 2012
Horco Molle, Tucumán, Argentina

The abstracts have been revised and evaluated by the Scientific Committee of the Tucumán Biology Association

29.

IN VITRO EVALUATION OF IRRIGATION SOLUTIONS FOR THE DISINFECTION OF GUTTA PERCHA CONES

Bottcher S[1], Erimbaue M[1], Tudela Ruiz A[1], Gaudioso C[2], Cangemi R[2], Bulacio MA[1].
[1]Faculty of Dentistry. [2]Faculty of Biochemistry Chemistry and Pharmacy National University of Tucumán. Argentina. E-mail: maritabulacio@hotmail.com

Among the materials used to seal the root canal, gutta percha cones are the most widely accepted and used. However, although produced under aseptic conditions, they can become contaminated by handling as well as by aerosols generated near the benchtop and during storage. That is why they should be disinfected before being used. The aim of this *in vitro* study was to assess the antimicrobial effect of sodium hypochlorite (NaOCl) 1% and 2.5%, chlorhexidine gluconate (CHX) 1% and 2%, and iodine potassium iodide (IKI) 0.3% used for 1 and 3 minutes on the disinfection of gutta percha cones contaminated with *E. faecalis.*
Materials and Methods: 48 gutta-percha cones were contaminated for 1 h with *E. faecalis* isolated from root canals. They were then immersed in the following irrigation solutions: 1% NaOCl, 2.5% NaOCl, CHX 1% CHX 2%, 3% IKI, distilled water (control) for 1 to 3 minutes. Cones were washed and placed individually in BHI medium and incubated for 24 h. After that time bacterial growth was determined. Results: No bacterial growth was observed with any of the experimental solutions employed at both time periods assessed, growth being found only in the control solution.
Conclusions: 1% and 2.5% NaOCl, 1% and 2% CHX and 0.3% IKI used for 1 min were effective to disinfect gutta percha cones contaminated with *E. faecalis* for 1 h.
Partly subsidized by CIUNT.

30.

A SURVEY OF THE PERIODONTAL CONDITION OF DENTAL STUDENTS

Flores G, Nieva Soria RG.
Periodontics Chair, Dentistry School UNT, Av Benjamín Aráoz 800. San Miguel de Tucumán, CP 4000. E-mail: graflores5@yahoo.com.ar

Introduction: Gingivitis, an inflammation of the soft tissues surrounding the teeth, can evolve into periodontitis. The index system scores a patient's periodontal condition. **Objectives:** To determine the periodontal condition and most frequent pathology of 4th year U.N.T. Dentistry School students. **Materials and methods:** We worked with all the students (125) attending Periodontics 4. We used the Community Periodontal Treatment Requirement Index (CPITN), which assigns a 0-4 code to each clinical evaluation. Each code is a diagnosis. 0 stands for good periodontal health, 1for gingivitis, 2 for gingivitis requiring treatment, 3 for mild periodontitis, and 4 for severe periodontitis. We also determined how many times a day students brushed their teeth, their use of interdental devices and smoking. **Results:** 60 right anteroinferior and posterosuperior sextants: code 1; 56 left posterosuperior sextants: code 1. 24 anteroinferior sextants: code2. 2 anteroinferior sextants: code 3. Code 4 was not registered. Daily tooth brushing: 31 students (24.8%), twice a day; 69 students (55.2%), three times; 9 students (7.2%) five times; 16 students (12.8%) did not answer. Interdental devices: 103 students (82.4%) used them, 22 (17.6%) did not. Smoking: 90 students (72%) did not smoke; 16 (12.8%) did; 19 (15.2%) did not answer. **Conclusions:** gingivitis proved to be the prevailing pathology. Highest percentages for buccal hygiene were 3 daily tooth brushings, use of interdental devices and non smokers.

31.

INCREASED RIBOFLAVIN CONCENTRATION IN MILK THROUGH FERMENTATION WITH SELECTED LACTIC ACID BACTERIA

Juárez del Valle M[1], Laiño J[1], Savoy de Giori G[1,2], LeBlanc JG[1].
[1]CERELA-CONICET, Chacabuco 145. (4000) Tucumán. Argentina. [2]Cátedra de Microbiología Superior, UNT. E-mail: juarezdelvalle@cerela.org.ar

Riboflavin (vitamin B_2) plays an important role in cellular metabolism and is the precursor of the coenzymes FMN and FAD that participate in numerous oxidation-reduction reactions and energy metabolism. In this work, lactic acid bacteria (LAB) able of produce vitamin B_2 in milk were identified. 180 strains, belonging to the collection of CERELA, were inoculated into a riboflavin-free synthetic medium and incubated at 37ºC for 16 h. The concentration of riboflavin was determined by means of a microbiological method using as reference strain *Lactobacilus (L.) rhamnosus* ATCC7469. Only 43 strains were able to grow in this medium. Out of these, 12 strains were selected because of their high riboflavin production: *L. plantarum* (2), *L. reuteri* (2), *L. fermentum* (2), *L. paracasei* (2), *L. bulgaricus* (2), *Lactococcus lactis* (1) and *Streptococcus thermophilus* (2). They were inoculated into cow milk and incubated at 37°C for 24h. Some of the strains were able to increase vitamin concentrations in milk up to 20% with respect to the initial concentration, whereas others decreased B_2 concentrations. The use of LAB capable of synthesizing riboflavin in milk would constitute a biotechnological strategy for the elaboration of novel vitamin bio-enriched foods.

32.

EFFECT OF HEAT TREATMENT ON FOLATE CONCENTRATION IN A B_9 NATURALLY BIO-ENRICHED YOGURT

Laiño J[1], Juarez del Valle M[1], Savoy de Giori G[1,2], LeBlanc JG.*
[1]Centro de Referencia para Lactobacilos (CERELA –CONICET). Chacabuco145, S. M. de Tucumán, Argentina (CP 4000). [2]Cát. de Microbiología Superior, Fac. de Bioq., Qca.y Fcia., U.N.T.
[*]E-mail: lainoje@cerela.org.ar

The aim of this work was to study the effect of heat treatment on folate concentration and stability in a B_9 naturally bio-enriched yogurt. 3 yogurts were elaborated using B_9 producing strains: *L. bulgaricus* CRL863 & CRL871 and *S. thermophilus* CRL803 & CRL415. After elaboration, they were heated 3 times at 80ºC for 30 min. After treatment, they were stored at 4ºC. The following were evaluated: **a)** folate production; **b)** acidity (pH); **c)** protein concentration & **d)** cellular viability (Log CFU/mL). **Results:** Highest levels of folate were reached after yogurt elaboration. Yogurt B (CRL871 + CRL803 + CRL415) showed the highest folate levels (223.53 ± 2.75 µg/L). In general, pH was about 4.75 and protein concentration ranged from 0.17 to 0.24 g/dL. After heat treatment, only yogurt B had the same folate values (about 220 µg/L). pH and protein levels were not modified by heat. **Conclusion:** out of the 3 yogurts tested, only B showed folate values 3 times higher than a commercial yogurt. After heat treatment, folate concentration decreased 40% in yogurts A & C, but remained constant in B. It is possible to elaborate and apply heat treatment to yogurts in order to increase their microbiological safety, with no loss of vitamin, depending on the strains used.