Sociedad de Biología de Cuyo

XXXVII Reunión Científica Anual

5 y 6 dic 2019 - San Luis

Libro de Resúmenes

XXXVII Reunión Científica Anual

Sociedad de Biología de Cuyo

5 y 6 de Diciembre de 2019

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Índice General

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178. CHEMICAL COMPOSITION AND ANTIBACTERIAL ACTIVITY AGAINST *Staphylococcus aureus* ATCC 25923 OF THE ESSENTIAL OILS FROM *Baccharis spartioides* ("Pichana") EXTRACTED BY STEAM DISTILLATION

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B. spartioides is an plant aromatic member of the Asteraceae family. Its branches are strongly scent because presence of wide variety of volatile compounds which they have demonstrate antimicrobial activity. The present work aims to determine essential oil composition of *B. spartioides* (BsEO) and assess the antimicrobial activity against *S. aureus*. BsEO was obtain by steam distillation, and its composition was determine by GC-MS. The antimicrobial activity was evaluated by disc diffusion test which diameter of the clear zone around the disc was measured and expressed in millimeters. It was assess the antimicrobial activity by increasing volumes of BsEO impregnated on disc using 6 µL of pure limonene (97%) and Amikasin (30 µg) as discs control. It was considerate diameters >20 mm by significant inhibitory effect. The majors constituents of BsEO were limonene (44%), sphatulenol (12%) and caryophyllene oxide (8%). Since limonene is BsEO major constituent, we considered this component as responsible of antimicrobial activity. Thus, calibration curve of µL of limonene vs diameter was made and it was determined that 6 µL of BsEO was the minimal volume for significant inhibitory effects. Major antimicrobial activity was expressed in discs impregnate with 5, 6, 7 and 8 µL of BsEO, which diameters was inferior to 20 mm. Results indicate BsEO present low antimicrobial activity (<20 mm) a but inhibition diameters founded (10-15 mm) could correspond to bacteriostatic activity.

179. ASSESSMENT OF VIRULENCE GENOTYPIC MARKERS IN *Yersinia enterocolitica* BIOTYPE 1A STRAINS OF DIFFERENT ORIGINS BY PCR

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Y. enterocolitica B1A comprise a heterogeneous group of strains that encompasses a wide variety of serotypes. They have been considered non-pathogenic microorganisms due to the lack of plasmid and chromosomal virulence determinants that characterize pathogenic strains; however, strains of this biotype are commonly reported not only from healthy individuals, but also from patients with gastrointestinal disorders. The comprehension of pathogenic mechanisms of B1A strains should focus on certain chromosomal virulence determinants associated to adhesion and invasion in intestinal cells (*myfA* and *ail* genes), production of heat-stable enterotoxin (*ystB*), some proteases (*hreP*) and iron chelating receptor (*fepA*), all of them related to growth and survival in host during infection. The synthesis of insecticidal toxins (*tccC*) is also considered a virulence determinant in *Y. enterocolitica* B1A. In this work, virulence-associated genes such as *ystB* (146 bp), *myfA* (272 bp), *hreP* (757 bp), *fepA* (438 bp) and *tccC* (1035 bp) were studied in 23 local *Y. enterocolitica* B1A strains of different origins (animal, food, environmental and human clinical samples) by PCR. Strains belonging to serotypes O:5 and O:7,8-8-8,19 (six isolates each), O:41,42-41,43 (four isolates), O:5-4,32-4,33 (three isolates), O:6,30-6,31 (two isolates), O:12,25-12,26 and NA (non-agglutinable/non-determined serotype) (one isolate each) were analyzed. DNA extraction was performed by the "boiling" technique and the amplification products were revealed by agarose gel electrophoresis. The frequency of detection of these genes in decreasing order was: *fepA* and *ystB* (22/23), *hreP* (21/23), *tccC* (3/23) and *myfA* (1/23). Regarding the relationship between genes and serotypes, *fepA, ystB* and *hreP* genes were demonstrated in strains of all serotypes, meanwhile *tccC* was observed in O:41,42-41,43 and O:7,8-8-8,19 strains, and *myfA* was only detected in O:7,8-8-8,19 strains. The serotype O:7,8-8-8,19 was associated to the presence of all genes. Regarding the relationship between genes and strain sources, *ystB, hreP* and *fepA* were demonstrated in chicken samples (3 isolates), porcine products (five isolates), ground meat (six isolates), human clinical samples (three isolates), and wild boar, hake fillet and wastewater (one isolate each). The *myfA* gene was observed in porcine skin (one isolate) and *tccC* was present in porcine skin (two isolates) and wild boar (one isolate). Interestingly, human samples belonged to serotypes O:5 (two isolates) and O:7,8-8-8,19 (one isolate) showed to be carriers of most of the studied genes, except *myfA* and *tccC*. Our results suggest the existence of alternative virulence mechanisms in *Y. enterocolitica* B1A and that the pathogenic potential of this biotype might be strain-dependent.

180. SANITIZING TREATMENTS ON FRESH VEGETABLES ARTIFICIALLY CONTAMINATED WITH *Yersinia enterocolitica* AND SHIGA TOXIN-PRODUCING *Escherichia coli*

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Fresh vegetables constitute essential ingredients of ready-to-eat salads in a healthy diet. From orchard to table, they may become contaminated by numerous microorganisms including *Yersinia enterocolitica* (Ye) and Shiga toxin-producing *Escherichia coli*