XLI REUNION ANUAL
DE LA SOCIEDAD ARGENTINA
DE FARMACOLOGÍA EXPERIMENTAL

24 al 26 de Noviembre de 2009

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B1-01

EFFICACY OF AN IMMUNOMODULATOR COMPOUND OBTAINED FROM *Enterococcus faecalis* CECT7121 CELL WALL

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Several studies have demonstrated the utility of the bacterial cell wall extracts (CWE) as immunomodulators on the treatment of some infectious diseases. *Enterococcus faecalis* (Ef) CECT7121, a probiotic strain, also demonstrated immunomodulation in some animal models. The goal of this work was to obtain an extract of CWE of *E. faecalis* CECT7121 and to evaluate its efficacy on *Salmonella enteritidis* (Se) in mice model. Culture died by heat Ef CECT7121 was sonicated during 30 minutes and was put under three successive centrifugations to 27,000g during 1 h. The obtained CWE was freeze-dried. For the efficacy study, thirty Balb-c mice were divided in 3 groups (n=10) and treated as follows: Group I Control: challenged with 2 doses of Se $5x10^7$ CFU/ml (LD_{99}) q12 h and 5 doses of physiological solution q 24h. Group II: received only 5 doses of 1000 µg of CWE q 24h. Experimental Group III: was challenged as Group II and treated with 1000 µg of CWE q 24h. The survival rate was observed during 15 days post- challenge. Thirty percent of the animals of the Group III survived, compared with those of the Group I Control (100% of death). There was not observed changes on health of animals of the Group II, by which demonstrate the safety of the CWE. We conclude that CWE compound would display some immunomodulator properties responsible of the prolongation of the animal survival after challenging with a DL99 of Se.

B1-02

CHARACTERISATION OF ENTEROCOCCUS RESISTANT TO VANCOMYICIN IN MEAT AND MILK DERIVED ARTISANAL FOOD.

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Enterococcus spp usually showed intrinsic antimicrobial resistance to antimicrobials used in clinical practice, like cephalosporins and aminoglucosides. Vancomycin enterococcus resistant (VRE) were reported by CDC as Public Health risk-international emergence. However, the resistance selection pressure exerted for the misuse of antibiotics at hospitals does not explain the emergence of VRE in invasive infectious diseases in susceptible or immune-deficient patients. The main research goal of this study was to investigate the presence of VRE in meat and milk derived-artisanal food. Eighteen salami and 21 cheeses, elaborated in 4 different artisanal meat-milk elaboration units (Tandil) were studied. Each sample was homogenized, processed by duplicate and inoculated in a specific VRE medium BH agar-vancomycin (6 µg mL^{-1}). Phenotypification was assessed by conventional biochemical tests, also using the SDS-PAGE method. Besides, was investigated the associated resistance (agar diffusion) to ampicillin, teicoplanin, imipenem, linezolid, ciprofloxacin and gentamicin. The presence of VRE in artisanal food was demonstrated as follows: six VRE strains were isolated (1 *E. faecalis,* 3 *E. faecium*, 1 *E. gallinarum* 1 *E. raffinosus*) with associated resistance to ciprofloxacin, gentamicin (higher level of resistance) and linezolid. More regional studies in the search of VRE are required, since the artisanal food may act as reservoir and or vehicle of these strains, establishing an emergent concern in public health.

B1-03

MULTIDOSE PHARMACOKINETIC STUDY OF AZITHROMYCIN IN PNEUMONIC FOALS

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Azithromycin (AZM) is an azalide antibiotic commonly used in Human and Veterinary Medicine, for the treatment of respiratory diseases. *Rhodococcus equi* is an intracellular facultative Gram positive pathogen that provokes pneumonia in foals. Pharmacokinetics (PK) of AZM in diseased foals has not been still described. The main goal of this study was to evaluate the plasma PK of AZM in a multiple dose regimen in experimentally challenged *R. equi* -foals-infection model of pneumonia. Five foals of 42 days old were inoculated by intra-tracheal endoscopy, with 25 mL of a 10^3 *R. equi* 103+ strain solution. When the disease developed, foals were treated orally with 10 mg/kg of AZM q 24 h for 6 days. Blood samples were obtained from jugular vein. Samples were frozen up to analysis by bioassay method using *Kocuria Rhizophila*. Cmax was obtained at 2 hours after the first and latest administration. Comparison between values of AUC_{0-24} (14.0 ± 2.95 µg.h/ml) and $AUC_{120-144}$ (18.0 ± 5.00 µg.h/ml) showed no statistical difference. These values pointed out that the steady state was not attained, being 6 days of treatment insufficient to obtain clinical and bacteriological cure.

B1-04

IN VITRO CEPHALEXIN ACTIVITY ON *Escherichia coli* STRAINS IN BHI, CANINE SERUM AND URINE USING A DYNAMIC MODEL

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The activity of antibacterial agents is evaluated in standard bacteriological media, therefore the results do not reflect the antibacterial activity in different biological fluids. We studied the activity of Cephalexin on six strains of *Escherichia coli* in BHI, canine serum and urine. The study was conducted with a simple *in vitro* model that mimics the plasma disposition of an antibiotic, and allows evaluate the effectiveness of this one respect of the evolution of initial inoculums size versus time and time-dependent concentrations of the antibiotic. The Cephalexin MIC on *Escherichia coli* was estimated in a previous study and was 16 µg/mL. For each *Escherichia coli* strain, an inoculum of 1 x 10^6 CFU/mL in BHI and canine serum was confronted with 64 µg/mL of Cephalexin (4 x MIC). In urine, the strains were confronted with similar concentrations of Cephalexin to those reported in dogs (15 x MIC). Cephalexin concentrations decreased exponentially with a half-life of 1.5 hours. The efficacy expressed as percentage of reduction in initial size of bacterial inoculum in BHI was 47.8 ± 5.6%, from 65.2 ± 11.1% in canine serum and 59.4 ± 5.3% in canine urine. The antibacterial activity was enhanced in biological fluids ($p < 0.05$), and there was no difference between them. These results show the variability of bactericidal activity of Cephalexin in similar environments than those encountered *in vivo*.