

JOINT EVENT

31st Euro Global Summit and Expo on Vaccines & Vaccination

&

4th World Congress and Exhibition on Antibiotics and Antibiotic Resistance

June 14-16, 2018 Barcelona, Spain

Enterocin AP-CECT7121: Activity against human methicillin-resistant *Staphylococcus aureus* producers of biofilm**Mónica Sparo, Gastón Delpech and Sabina Lissarrague**
National University of Central Buenos Aires, Argentina

Large-scale antimicrobial use exerts a selective pressure over prevalent pathogens, such as methicillin-resistant *Staphylococcus aureus* (MRSA). On the last years, biofilm formation has been added to antimicrobial multi-resistance. Often, biofilm associated infections develop into a chronic state. Lack of new pharmacological options for the treatment of infectious diseases determined the search of alternative therapeutical strategies which complement conventional antimicrobials. One possibility is the antagonism mediated by antimicrobial peptides, such as AP-CECT7121, an enterocin produced by the strain *Enterococcus faecalis* CECT7121. The aim of this study was to assess the activity of AP-CECT7121 against biofilm-producers MRSA. Anti-biofilm activity was studied against n:7 MRSA from hemocultures of patients with skin and soft tissue infections, attending at a general hospital (2017). Minimum Inhibitory Concentration (MIC) for AP-CECT7121 was determined. For assessing enterocin activity against biofilm cells, suspensions in brain-heart broth-glucose 1% broth were added to wells and incubated for 24 h at 35±2°C. Formed biofilms were incubated with AP-CECT7121 (MICx1, MICx4) for 1 and 24 h. viable cell counts were performed in triplicate. Scanning electron microscopy (SEM) was carried out with an inert surface treated with AP-CECT7121. MRSA was added and biofilm formation was observed. Dose dependent effect of enterocin against biofilm cells was detected. AP-CECT7121 (MICx4) showed bactericidal activity at 24 h (-3.0 to -3.3Log₁₀ CFU/ml). Through SEM, prevention of biofilm formation with AP-CECT7121 was proved. Enterocin AP-CECT7121 constitutes an attractive candidate as a natural tool for prevention and treatment of biofilm-associated infections produced by MRSA.

Biography

Mónica Sparo has completed her PhD in Biochemistry and Microbiology from Universidad Nacional de Buenos Aires of Argentina. She is an Associate Professor at the Universidad Nacional Del Centro de Buenos Aires, School of Medicine. Her main research areas are "Antimicrobial resistance and bacterial pathogenicity determinants". She has been awarded 27 grants for research projects. She has published more than 80 papers in reputed journals.

monicaspapo@gmail.com

Notes: