LVII SAIB Meeting - XVI SAMIGE Meeting

SAIB - SAMIGE Joint Meeting
2021 *on line*

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SAIB-SAMIGE Joint meeting 2021 - Program at a glance

	Monday, Nov 1st	Tuesday, Nov 2nd	Wednesday. Nov 3rd	Thursday, Nov 4th	Friday, Nov 5th
9:00-9:15	**Opening ceremony**				
9:15-11:15	**PARALLEL SYMPOSIA** ***Cell Biology*** ***Microbiology I: Host-pathogen Interactions***	**PARALLEL SYMPOSIA** ***Plants*** ***Microbiology II: Biotechnology & Environmental Microbiology***	**PARALLEL SYMPOSIA** ***Lipids*** ***Microbiology III: Molecular Microbiology*** ***Signal transduction***	**PARALLEL SYMPOSIA** ***Glycobiology*** (*Tribute to Dr. J.L. Daniotti*) ***Microbiology IV: Microbial Ecology & Physiology***	**SYMPOSIUM** ***Young investigators***
11:15	**Break**	**Break**	**Break**	**Break**	**Break**
11:30-12:30	**SAIB** **Plenary lecture** **"A.Sols"** *Consuelo Guerri*	**SAMIGE** **Plenary lecture** *Francisco García del Portillo*	**SAIB** **Plenary Lecture** **EMBO** *Daniela Corda*	**SAMIGE** **Plenary lecture** *Dennis Dean*	**Closing ceremony**
12:30	**Break**	**Break**	**Break**	**Break**	
13:30-13:50		*Tribute to Dr. Israel Algranati*		*Tribute to Dr. Juan Dellacha*	
14:00-15:00	**SAMIGE** **Plenary lecture** *Luis Larrondo*	***SAIB*** **Plenary Lecture** ***"Héctor Torres"*** *Joaquín Espinosa*	**SAMIGE** **Plenary lecture** *Josep Casadesus*	***SAIB*** ***Plenary Lecture*** ***"Ranwel Caputto"*** *Beatriz Caputto*	
15:00-15:15	**Break**	**Break**	**Break**	**Break**	
15:15-17:15	**Poster session**	**Poster session**	**Poster session**	**Oral communications**	
17:15-17:30	**Break**	**Break**	**Break**	**Break**	
17:30-19:30	**Oral communications**	**Oral communications**	**Break** **19:00** **SAIB Assembly**	**Break** **19:00** **SAMIGE Assembly**	

This meeting was supported by:

VIDEO CONFERENCE ROOM SUPPORT

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BIOGENIC SILVER NANOPARTICLES AFFECT MOTILITY AND ERADICATE THE BIOFILM IN *Yersinia enterocolitica*

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Yersinia enterocolitica is a Gram-negative cocobacillus, not sporulated, mobile at 25 °C but immobile at 37 °C. This pathogenic specie is widely distributed in nature and animals, being the pig the main reservoir of pathogenic strains for humans. *Y. enterocolitica* can cause numerous diseases, usually at gastrointestinal level but various complications can be manifested especially in immunocompromised people, being the cases where antibacterial therapy is needed. Biofilms are communities of microorganisms that grow irreversibly adhered to living or inert substrates, contained in a polymer matrix secreted by themselves. The most important property of the biofilm forms in clinical medicine is the enhanced resistance to antimicrobial agents. The flagellar motility is crucial initially for surface attachment and subsequently for biofilm formation in *Y. enterocolitica*. In addition, the *fliA* gene is a regulator gene necessary for the expression of flagella. The objective of this work was to determine if silver nanoparticles (AgNPs) phytosynthesized from the aqueous extract of *Bothriochloa laguroides* are capable of inhibiting motility modifying the expression of the *fliA* gene and eradicating mature biofilm of *Y. enterocolitica.* Two strains were used: *Y. enterocolitica* 8081 bio/serotype 1B/O:4 and *Y. enterocolitica* ME110 1A/O:5. The swimming and swarming motility was determined in a culture medium containing 0.3 and 0.6 % p/v of agar respectively, the *fliA* gene expression was carried out by RT-PCR and the mature biofilm eradication was determined by the crystal violet technique. The swimming and swarming motility was effectively reduced by AgNPs at 7.8 pM in the two tested strains. The decrease in swimming was 90.38 % for *Y. enterocolitica* 8081 and 74.27 % for *Y. enterocolitica* ME110, while for swarming it was 79.16 % and 89.28, respectively. Furthermore, AgNPs at 31.25 pM significantly reduce ($p<0.05$) the expression of the *fliA* gene in the two *Y. enterocolitica* strains. In addition, the AgNPs were able to eradicate mature biofilm at a concentration of 500 pM, with an eradication percentage of 99.33 % for *Y. enterocolitica* 8081 and 92.95 % for *Y. enterocolitica* ME110. The AgNPs were able to decrease the motility in *Y. enterocolitica* and to eradicate the mature biofilm, for which they could be used in the future not only to prevent the formation of biofilm but also to eradicate formed biofilms.

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BIOFILM FORMATION CHARACTERIZATION OF *Mannheimina haemolytica* ARGENTINIAN ISOLATES

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Mannheimina haemolytica is a Gram-negative respiratory pathogen frequently isolated in Argentinian feed lots. Symptoms are observed after stress situation like transport or diet changes. Infection by this bacterium causes reduced weight and death in calves. Other authors described a strong correlation between biofilm formation and animal stress. Particularly, the stress induced hormone adrenaline inhibits biofilm formation *in vitro*. This result suggests that biofilm formation and bacteria response to animal stress may be important for *M. haemolytica* pathogenesis. In order to design prevention and palliative strategies to reduce the impact of the disease caused by this pathogen we decided to characterize local isolates. In this work we present five *M. haemolytica* strains isolated from Buenos Aires province area. Laboratory characterization included growth, biofilm formation on plastic surface, macrocolony formation over semi solid media and sensitivity to adrenaline. Interestingly we observed significative differences in growth kinetics in BHI media. Strains Mh1 and Mh2 present a growth velocity of 0.31 and 0.30 h^{-1} respectively. Other isolates (Mh3, Mh4 and MhA) presented lower velocities (0.11, 0.15 and 0.14 h^{-1} respectively). Biofilm formation in plastic 96-well were observed in all strains after 48 and 72 hours in static incubation. However, biofilm phenotype was significantly different between strains. Strains Mh1 and Mh2 presented significantly more biofilm formation compared to other strains. This phenotype correlates with bigger macrocolony formation observed in plaques. Finally, we were not able to observe sensitivity to adrenaline, biofilm formation was not affected by adrenaline in any strain, in the conditions tested (growth in BHI media, 48 h static incubation, 55 µM adrenaline). Further work is needed to elucidate if adrenaline effect, previously observed by other authors, is present in local isolate if other growth conditions are tested. The work present here is the milestone for further characterization of local isolates of *M. haemolytica*. This will permit design experiments to understand how the pathogen induce severe symptoms and finally the death of animals and economical losses.

MI-P067-279

ANTIFUNGAL ACTIVITY OF BIOGENIC SILVER NANOPARTICLES IN COMBINATION WITH AMPHOTERICIN B ON *Candida glabrata*

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