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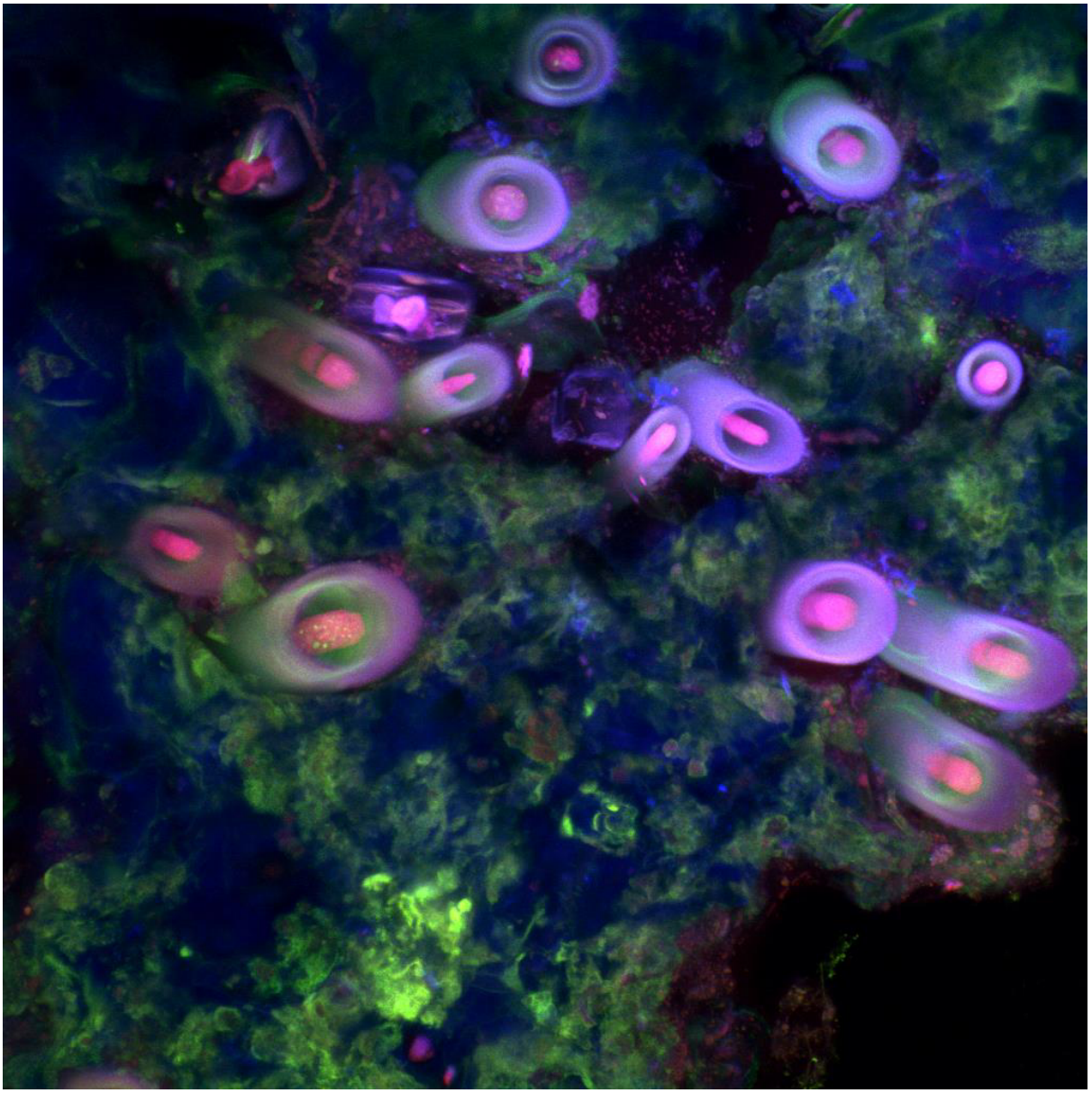
LVI SAIB Meeting – XV SAMIGE Meeting



SAIB-SAMIGE Joint Meeting 2020 – *Online*

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Cover image:

Mineral–microorganisms interactions

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A Confocal Laser Scanning Microscopy image of a resin-embedded microbialite from Laguna Negra (Puna-Catamarca), stained with calcein (a fluorescent dye that produces a stable complex in the presence of calcium and fluoresces in the green region of visible light). Mineral aggregates are observed in blue. Their surfaces are partially stained with calcein, indicate the presence of free Ca^{2+} ions. Diatoms and *Rivularia halophila* filaments are visible in red thanks to their photosynthetic pigments.

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LVI Annual Meeting
Argentine Society for Biochemistry and Molecular Biology
(SAIB)

XV Annual Meeting
Argentinean Society for General Microbiology
(SAMIGE)

SAIB-SAMIGE – Online
Joint Meeting 2020

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CB-P03-76
RADIATION EXPOSURE OF MURINE MELANOMA B16F0 CELL LINE INDUCES BYSTANDER SENESCENCE

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Radiation therapy is one of the most important options in treating cancer. Based on DNA damage, ionizing radiation activates different programs of cell death or survival such as apoptosis, autophagy, and senescence. Senescent cells are characterized by an irreversible cell arrest and the secretion of a protein profile known as the secretory senescence-associated phenotype (SASP). This SASP can induce multiple effects in neighboring cells that had not received radiation, a phenomenon that in radiotherapy is part of the so-called bystander effects. The aim of this work was to evaluate whether SASP from radiation induced senescent cells produces bystander effects in non-irradiated tumor cells. Murine melanoma cell line B16F0 were seeded and 24 h later exposed to 0 or 10 Gy gamma radiation (control B16F0 and iB16F0 cells respectively). Three days later we observed that radiation inhibited proliferation and clonogenic capacity of iB16F0 cells. Also, increased autophagic and senescent cells number. On the other hand, apoptosis cell number was not increased. Conditioned media (CM) from control B16F0 cells (control CM) and iB16F0 cells (iCM) were collected and used to evaluate the bystander effect of SASP in proliferating B16F0 cells. iCM did not affect cell migratory capacity but reduced cell proliferation and induced cell senescence. Through proteomic analysis we observed that iCM contains higher concentration and diversity of proteins associated with the induction of senescence as IGFBPs protein family. We conclude that SASP from iB16F0 cells suppress tumor cell growth by inducing bystander senescence in a paracrine manner due to changes in SASP protein profile. Further studies should be done to identify the factors involved in restricting tumor growth with the idea of use in therapy

CB-P04-118
IN VITRO IMMUNE RESPONSE INDUCED BY A *Salmonella* TYPHIMURIUM MUTANT

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Salmonella genus is responsible for gastrointestinal diseases and is a pathogen with great prevalence among argentine population. The infection capacity of *Salmonella* depends on the genes expression under different regulatory systems. The RcsCDB system regulates genes involved in virulence, such as those of colanic acid biosynthesis and flagellar genes, among others. This uncommon regulatory system is constitutively activated in *Salmonella* Typhimurium *rcsC11* strain since the RcsB regulator is not dephosphorylated by the mutated RcsC sensor. As a consequence, *rcsC11* strain presents a mucoid phenotype, loss of motility and virulence attenuation. The aim of this study was to determine differences in the host immune response induced by the *rcsC11* and wild type strains. For this purpose, the *in vitro* infection assay was performed with two relevant cell lines. On the one hand, intestinal epithelial cells (Caco-2), as an initial barrier to the enteropathogen infection. On the other hand, macrophage cells (Raw264.7) which play a principal role in the immune response. The gentamicin protection assay was performed, and the cell culture supernatant was taken out at different stages of infection. This supernatant was used to determine the presence of extracellular cytokines by flow-cytometry. The results showed that *rcsC11* mutant induced the IL-6, IL-10, and TNF cytokine secretion to levels similar to those of the wild type strain. However, the IL-8 cytokine levels secreted by Caco-2 cells showed a difference between *rcsC11* and wild type strain at 18 h post infection. These results demonstrated that the *rcsC11* strain, is able to produce the same immune response of a wild type strain, even when it displays an attenuated phenotype and a deficient replication within the host. All the data allow us to propose that *rcsC11* could be a candidate for the development of attenuated vaccines against this enteropathogenic bacterium.

CB-P05-142
ROLE OF SNX17 IN THE REGULATION OF ACTIN CYTOSKELETON AND PHAGOSOMAL MATURATION BY DENDRITIC CELLS

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Dendritic cells (DCs) have deeply adapted their endocytic network, achieving a cross-presentation efficiency higher than any other antigen-presenting cell. This implies the proper internalization, processing and presentation of exogenous antigens derived from different pathogens or tumor cells in the context of MHC-I molecules to trigger cytotoxic T cell responses. On the other hand, sorting nexins (SNXs) are proteins characterized by the presence of a PX domain that interacts with PI3P, therefore they are mostly distributed within early endosomal compartments. From there, SNXs control very important intracellular events, such as endocytosis, signaling, sorting, and endosomal tubulation. In the context of DCs, we have shown that SNX17 represents an important regulator of the cross-presentation of soluble, particulate and *Toxoplasma gondii*-associated antigens. Furthermore, we have demonstrated that SNX17 plays a pivotal role to guarantee the efficient internalization of exogenous antigens and the recycling of integrins by DCs. In this study, we decided to delve into the role of