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ABSTRACTS
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BONE BIOCOMPATIBILITY OF HYBRID BIOACTIVE GLASS-CHITOSAN-POLYVINYL ALCOHOL 3D MATRIXES FOR TISSUE ENGINEERING.

Missana LR[3,4,5], ColettaDJ[1,5], VitelliEJ[1,5], BumaguinGE[1], GarbinoFG[1], ZabalzaF[1], Jammal MV [3,4], PereiraM[2], FeldmanS[1].
1. LABOATEM, Fac. Cs Médicas. Univ. Nac. Rosario, Argentina. 2. Laboratório Biomateriais, Depto Engenharia Metalúrgica e Materiais, Universidade Federal Minas Gerais, Belo Horizonte, Brasil. 3. PROIMI-CONICET. Av.Belgrano y Pje Caseros. Tucumán. 4. Fac.Odontología. UNT. Av. B.Aráoz 800. Tucumán. Argentina. 5 ex_aequo. E-mail: liliana.missana@gmail.com

Bone biocompatibility of hybrid polymer compounds bioactive glass (MHVB) 20% polymerized with different chitosan ratios (Q) and polyvinyl alcohol (PVA) for bone tissue engineering scaffolds was evaluated. MHVB with chitosan-PVA 3:1 ratio made up Group A (Ga), Group B (Gb): 1:1 ratio and Group C (GC): 1:0 ratio, respectively. In femoral defects, 6 mm Ø, 15 matrices were implanted for 3 months into 1-week-old New Zealand rabbits, Samples were obtained, fixed in buffered formalin10, with and without decalcification. Serial sections were stained with H&E or Masson-Goldner. Two areas were assessed: 1) matrix and interface and 2) surrounding bone. Zone1: Ga) new bone sections surrounded by fibrous and bone tissue. Gb) little bone formed and mineralization cores surrounded by fibrous and bone tissues and Gc) mineralized matrix and new bone areas, granulation tissue and inflammation were found. There was non bone capsule. Zone 2: all groups showed bone trabeculae, compound and pagetoid type. Osteoid layer thickness was variable. Ga: cubic osteoblasts and other shapes, in multiple prominent layers. Gb and Gc: osteoblasts and lining cells were found. All groups showed foreign particles, bleeding and congestion. Inflammation. There was new bone formation in all MHVB-PVA-Q. Absenceof bone capsule in Gc demonstrates its greater biocompatibility.

A185
MEDICINAL PLANTS FROM KAZAKHSTAN AND ARGENTINA: ANTIFUNGAL ACTIVITY OF THEIR ESSENTIAL OILS

Sampietro[1,*] DA, Lizarraga[2] E, Ibatayev[3] Zh A, Omarova[3] A, Suleimen[3] Ye M, Catalán[2] CAN.
[1]LABIFITO, [2]INQUINOA-CONICET, Fac.Bioq. Química y Farmacia, Univ.Nac. Tucumán, Ayacucho 471, 4000, S.M. de Tucumán, Argentina. [3]Institute of Applied Chemistry, Chemistry Dep. Eurasian Nat. University, Munaitpassovst., 5 (010008). Astana, Republic of Kazakhstan. E-mail: dasampietro@hotmail.com

Plant essential oils are usually considered with low toxicity and with a reduced impact on the environment. Some of them are biostatics or biocides, with low ability to induce microbial resistance. The aim of this work was to evaluate the composition and antifungal activity of essential oils from native medicinal plants of Argentina and Kazakhstan. These oils were obtained by hydrodistillation from the aerial parts of *Acantholippia deserticola*, *Artemisia proceriformis*, *Achillea micrantha* and *Libanotis buchtormensis*. They were analyzed by gas chromatography coupled to mass spectrometry and the antifungal effect was evaluated by the microdilution method in YES medium. The main constituents of the essential oils were β-thujone (66.5±0.2%), and *trans*-sabinyl acetate (12.1±0.2%) in *A. deserticola*, α-thujone (66.9±0.4%) in *A. proceriformis*, 1,8-cineole(26.9±0.5%), and camphor (17.7±0.3%) in *A. micrantha* and *cis*-β-ocimene (23.3±0.3%), and *trans*-β-ocimene (18.4±0.2%) in *L. buchtormensis*. The fungal susceptibility was *Septoria tritici* and *S. glycines* (MIC_{100}=0.70-2.70 mg/ml) >*Fusarium verticillioides*, *F. graminearum* and *Aspergillus carbonarius* (MIC_{100}=2.70-10.60 mg/ml) and *A. niger* (MIC_{100}=5.31-21.20 mg/ml). The essential oil of *A. deserticola* showed the highest antifungal activity. Further research is needed to establish the safety and real potential of the essential oils from *A. deserticola* as botanical fungicides.

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EFFECT OF *Pseudomonas putida* ON THE GROWTH OF *Arabidopsis thaliana* IN THE PRESENCE OF HIGH LEVELS OF Al^{3+}

Liffourrena AS[1,3]; Rivera D[2,3]; Cassán[2,3] F; Lucchesi GI[1,3].
[1]Dpto. Biología Molecular, [2]Dpto Ciencias Naturales. FCEFQyN. UNRC. Río Cuarto. Córdoba. [3]CONICET.
E-mail: aliffourrena@exa.unrc.edu.ar

The high levels of Al^{3+} in the soil affect root growth, which influences the absorption of water and nutrients and disrupts normal plant development. *Pseudomonas putida* A (ATCC 12633) is capable of adsorbing Al^{3+} through the formation of complexes with phosphatidylcholine (PC) of the membrane. The objective of this work was to study in A. *thaliana* the capacity of *P. putida* to mitigate the effects of Al^{3+} on plant growth and development. 7 days after growth in MS medium or MS supplemented with 20 mM Al^{3+}, the seedlings were inoculated with 10µl (1 x 10^8ufc ml^{-1}) of *P. putida* A (ATCC 12633) or *P. putida* PB01 (a mutant strain without PC). After 28 days of incubation, root length (A), leaf mass (B) and amount of protein (C) were determined. With respect to the absence Al^{3+}, plants grown in the presence of the ion showed a decrease in A, B and C of 72%, 42% and 55%, respectively. In the presence of Al^{3+} and when inoculated with *P. putida*, parameters A, B and C increased by 79%, 45% and 41%, respectively, while an increase of 33%, 22% and 19% for A, B and C, respectively, was detected in those inoculated with *P. putida* PB01. The analysis of plant roots using the fluorochrome 2,3,4,5,7-pentahydroxyflavone (morin reagent), which forms Al-morin complex, showed a lesser