EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

Curriculum Vitae

PERSONAL INFORMATION

Ana Civantos

WORK EXPERIENCE

June 2021- Present

Scientific Assessor

Spanish Agency of Medicines and Medical Devices (AEMPS) (Spain)

Pharmacological Medicines Assessment of Veterinary Medicines. Evaluation of safety and residues of veterinary medicinal products.

January 2020-July 2020

Assistant Research Professor

Penn State University (United States)

Online activities with the RUSSEL group (led by Prof. Jean Paul Allain at Penn State University). Co-director of the biomaterial research group (master and Ph.D. students)

February 2017-December 2019

Postdoctoral Research Associate

Department of Nuclear, Plasma and Radiological Engineering. University of Illinois at Urbana Champaign (UIUC) (United States)

I have been working with Professor Jean Paul Allain and his research group RSSEL, leading three main research lines: i) Development of biocompatible and biomimetic metallic, ceramics, and polymeric-based scaffolds to promote bone tissue regeneration.; ii) Designing bioinspired and antibiofouling surfaces based

on natural polymers (chitosan, bacterial cellulose, silk, and collagen); iii) Tuning biomaterials surface properties to control cell-implant interaction at the biointerface using ion irradiation by advance plasma technologies.

March 2016-December 2016

Postdoctoral Fellow inTissue Engineering Group

University Complutense of Madrid (Spain)

Development of the research activities described in the CONSOLIDER project. (PRODESTECH, CSD2009-00088)

March 2015-March 2016

Postdoctoral Fellow in FUOPL Research Group

Spanish National Research Council (CSIC) (Spain)

Development and participation in research lines described in MAT2013 project.

Synthesis and characterization of polymeric networks based on vinyl pyrrolidone (PVP) and vinyl caprolactame (PVC). Cell attachment and detachment studies of these pseudo polymeric networks. Degradation studies on chemistry modifications. Evaluation as artificial skin for burn skin regeneration purposes.

July 2014-March 2015

Postdoctoral Fellow- in Tissue Engineering Group (UCM)

University Complutense of Madrid (Spain)

Development of the research activities described in CONSOLIDER project. (PRODESTECH, CSD2009-00088). Studies on chitosan film biodegradation and rhBMP2 biodistribution.

EDUCATION AND TRAINING

2017- 2017

Understanding biosafety in research laboratory

University of illinois at Urbana-Champaign, (UIUC) IL (United States)

2015- 2015

Certification on the experimental procedures using with animals in research proyects, Category C

Animalaria Formación y Gestión S.L (Spain)

2009- 2014

PhD in Biochemistry and molecular Biology, Pharmacy Faculty

Complutense University of Madrid (UCM) (Spain)

The title of my research thesis was: Physico-chemical and biological characterization of chitosan films as functional carriers for Bone morphogenetic protein (BMP-2). Evaluation of different chitosan samples (different origin, molecular weight, and deacetylation degree) and their filmogenic properties to design an active implant coating able to efficiently retain the rhBMP-2 and control its release in in vitro and in vivo models to enhance bone-implants osseointegration.

2008- 2009 **Certification on The use of experimental animals in research: Categoy B**
University Complutense of Madrid (UCM), Veterinary Faculty (Spain)

2007- 2008 **Diplome of Advanced Studies (DEA)**
University complutense of Madrid (UCM), Pharmacy Faculty (Spain)
Characterization of chitosan films and the influence of chitosan properties on filmogenic activity and protein released.

September 2005-June 2006 **Undergrad fellowship**
Departament of Inorganic Chemistry (UCM), Farmacia (Spain)
Synthesis of mesoporous scaffolds and characterization studies to evaluate the
development of these ceramic materials to produce hydroxyapatite layer in a Simulated body fluid (SBF) solution for the bone regeneration process.

2000- 2006 **Graduate in Pharmacy, Pharmacy Faculty**
Complutense University of Madrid (UCM) (Spain)

ADDITIONAL INFORMATION

Expertise: Biomaterials, Synthesis of scaffolds, In vitro and in vivo response, Tissue engineering, Biomedical polymers, Nanotopography.

Publications:

1 A. Y. Mansilla; A. Civantos; R. Paris; J.R. Mendieta; C Diaz Lopez; V Ramos; C A Casalongue; E. Martinez Campos. 2021. Wheat Germin-like protein: preliminary studies on chitin/chitosan matrix for tissue engineering applications Journal of Bioscience and Bioengineering. Elsevier.

2 A. Del Prado; A. Civantos; E. Martinez-Campos; P. A. Levkin; H. Reinecke; A. Gallardo; C. Elvira. 2020. Efficient and Low Cytotoxicity Gene Carriers Based on Amine-Functionalized Polyvinylpyrrolidone Polymers. Multidisciplinary Digital Publishing Institute. 12-11, pp.2724.

3 C. Arvinius; A. Civantos; C. Rodriguez-Bobada; F.J. Rojo; D. Perez-Gallego; Y. Lopiz; F. Marco. 2020. Enhancement of in vivo supraspinatus tendon-to-bone healing with an alginate-chitin scaffold and rhBMP-2 Injury. Elsevier. 52-1, pp.74-84.

4 M. Giner; A. Olmo; M. Hernandez; et al; Y Torres. 2020. Use of Impedance Spectroscopy for the Characterization of In-Vitro Osteoblast Cell Response in Porous Titanium Bone Implants Metals. Multidisciplinary Digital Publishing Institute. 10-8, pp.1077.

5 A Civantos; M Giner; P Trueba; et al; Y Torres. 2020. In vitro bone cells behavior on porous titanium samples: influence of the obtained porosity by loose sintering and space holder techniques Metals. Multidisciplinary Digital Publishing Institute. 10-5, pp.696.

6 S. Arias; M.K. Cheng; A.Civantos; J. Devorkin; C. Jaramillo; J.P. Allain. 2020. Ion-induced nanopatterning of a bacterial cellulose hydrogel ACS Applied Nano Materials. ACS. 3-7, pp.6719-6728.

7 S. L Arias; J Devorkin; J Spears; A Civantos; JP Allain. 2020. Bacterial envelope damage inflicted by bioinspired nanospikes grown in a hydrogel ACS Applied Bio Materials. American Chemical Society. 3-11, pp.7974-7988.

8 S.Arias; J. Devorkin; A Civantos; J.P. Allain. 2020. Escherichia coli Adhesion and Biofilm Formation on Polydimethylsiloxane are Independent of Substrate Stiffness Langmuir. American Chemical Society. 37-1, pp.16-25

9 A. Civantos; J.P. Allain; J.J. Pavon; et al; Y. Torres. 2019. Directed Irradiation Synthesis as an Advanced Plasma Technology for Surface Modification to Activate Porous and "as-received" Titanium Surfaces Metals. Multidisciplinary Digital Publishing Institute (MDPI). 9-12, pp.1349.

10 A Civantos; A. M. Beltran; C. Dominguez-trujillo; et al; Y. Torres. 2019. Balancing porosity and mechanical properties of titanium samples to favor cellular growth against bacteria Metals. MPDI AG. 9-10, pp.1039. ISSN 20754701.

11 I. Srivastava; D. Sar; P. Mukherjee; et al; Pan, D. 2019. Enzyme-Catalysed Biodegradation of Carbon Dots follow Sequential Oxidation in a Time Dependent Manner Nanoscale. Royal Society of

Chemistry. 11-17, pp.8226-8236.

12 A. M. Beltran; A Civantos; C. Dominguez-trujillo; et al; Y. Torres. 2019. Porous titanium surfaces to control bacteria growth: Mechanical properties and sulfonated polyetheretherketone coatings as antibiofouling approaches Metals. MDPI AG. 9-9, pp.995. ISSN 20754701.

13 S. L Arias; J Devorkin; A. Civantos; C Jaramillo; JP Allain. 2019. Bioinspired interfaces for the management of skin infection Racing for the Surface: Pathogenesis of Implant Infection and Advanced Antimicrobial Strategies.Racing for the Surface. Springer International Publishing. pp.457-476. ISBN 978-3-030-34475-7

14 A. Civantos; A. Barnwell; A. R. Shetty; et al; J.P Allain. 2019. Designing nanostructured Ti6Al4V bioactive interfaces with directed irradiation synthesis towards cell stimulation to promote host tissue-implant integration ACS Biomaterials Science and Engineering. ACS David Kaplan. 5-7, pp.3325-3339.

15 A. Civantos; Cristina Dominguez Trujillo; Raisa J Pino; et al; Yadir Torres. 2019. Designing bioactive porous titanium interfaces to balance mechanical properties and in vitro cells behavior towards increased osseointegration Journal of Surface and coatings technologies. Elsevier. 368, pp.162-174.

16 J.J. Pavon; D. Lopez; F. Mondragon; et al; J.P. Allain. 2018. Balancing Biofunctional and Biomechanical Properties with Porous Titanium Reinforced by Carbon Nanotubes Journal of biomedical research part A. Wiley Online Library. 107-4, pp.719-731.

17 Martinez-Campos, E; Santos-Coquillat, AM; Rodriguez, ME; Civantos, A; Ramos, V; Elvira, C; Reinecke, H; Gallardo, A. 2018. Thermosensitive hydrogel platforms with modulated ionic load for optimal cell sheet harvesting European Journal of Polymers. Elsevier. 103, pp.400-490.

18 R. Lopez-Cebral; A. Civantos; V. Ramos; et al; Sanchez A. 2017. Highly Valuable Endogenous Molecules Incorporated Within Physically Cross-linked Gellan gum Scaffolds for Bone Tissue Regeneration Tissue Engineering Part A. Mary Ann Liebert, Inc. 23-1.

19 Lopez-Cebral, R; Civantos, A; Ramos, V; Seijo, B; Sanz-Casado, JV; Sanchez, A. 2017. Gellan gum-based physical hydrogels incorporating highly valuable endogen molecules and associating BMP-2 as bone formation platforms Carbohydrate Polymers. Elsevier. 167, pp.345-355. ISSN 01448617.

20 M. Yates; M.Ramos-Gomez; A.Civantos; et al; M.Luengo. 2017. Beverage waste-derived biomaterials for tissue engineering Green Chemistry. Royal Society of Chemistry.

21 A. Motealleh; S. Eqtesadi; A. Civantos; A. Pajares; P. MIranda. 2017. Robocast 45S5 bioglass scaffolds: In vitro behaviour Journal of materials science. 52-15, pp.9179-9191.

22 I. Aranaz; E.Martinez-Campos; C. Moreno-Vicente; A. Civantos; Garcia-Arguelles, S; F. Del Monte. (4/5). 2017. Macroporous calcium phosphate/chitosan composites prepared via unidirectional ice segregation and subsequent freeze-dying Materials. Dinesh Agrawal.

23 M. Katunar; A. Gomez Sanchez; A. Santos Coquillat; et al; S Cere. 2016. In vitro and in vivo characterization of anodised zirconium as a potential material for biomedical applications Materials Science & Engineering C.

24 Civantos, A; Martinez-Campos, E; Nash, M. E; Gallardo, A; Ramos; Aranaz, I. 2016. Polymeric and non-polymeric platforms for cell sheet detachment Advanced Materials Interfaces. WILEY-Scrivener Publishing LLC, USA. Chapter 13. ISBN 9781119242604.

25 Martinez-Campos E.; Civantos, A; Redondo, J.A.; Guzman, R.; Gallardo, A.; Ramos V; Perez-Perrino M.; Aranaz I. 2016. Cell adhesion and proliferation on sulfonated and non-modified chitosan films AAPS PharmSciTech.pp.1-9. ISSN 1550-7416

26 Y. Lopiz; C. Arvinius; C. Garcia-Fernande; M.C. RodriguezBobada; P. Gonzalez-Lopez; A. Civantos; F. Marco. 2016. Repair of rotator cuff injuries using different composites Revista Espanola de Cirugia Ortopedica y Traumatologia. SECOT.

27 A. Civantos; E. MArtinez Campos; V. Ramos; C. Elvira; A. Gallardo; A. Abarrategi. 2016. Titanium surface modifications and coatings: towards clinically useful bioactive implants ACS Biomaterials Science and Engineering. Prof. David Kaplan. 3-7, pp.1245-1261.

28 Munoz S; Pavon J; Rodriguez-Ortiz JA; Civantos A; Allain JP; Yadir T. 2015. On the influence of space holder in the development of porous titanium implants: Mechanical, computational and biological evaluation Materials Characterization. 108, pp.68-78. ISSN 1044-5803.

29 Rojo, E.S.; Ramos, M; Yates, M; et al; Argomaniz, L.V. 2014. Preparation, characterization and;in vitro;osteoblast growth of waste-derived biomaterials RSC Advances. 4-25, pp.12630-12639. ISSN 20462069.

30 Abarrategi, A; Fernandez-Valle, M.E.; Desmet, T; et al; Lopez-Lacomba, J.L. 2012. Label-free magnetic resonance imaging to locate live cells in three-dimensional porous scaffolds Journal of the

Royal Society Interface. 9-74, pp.2321-2331. ISSN 17425689.

31 Abarrategui, A; Moreno-Vicente, C; Martinez-Vazquez, F.J.; et al; Lopez-Lacomba, J.L.2012. Biological Properties of Solid Free Form Designed Ceramic Scaffolds with BMP-2: In Vitro and In Vivo Evaluation PLoS ONE. 7-3. ISSN 19326203.

32 Abarrategi, A; Lopiz-Morales, Y; Ramos, V; Civantos, A; Lopez-Duran, L; Marco, F; Lopez-Lacomba, J.L.2010. Chitosan scaffolds for osteochondral tissue regeneration Journal of Biomedical Materials Research - Part A. 95-4, pp.1132-1141. ISSN 15493296.

33 Abarrategi, A; Garcia-Cantalejo, J; Moreno-Vicente, C; et al; Lopez-Lacomba, J.L. 2009. Gene Expression Profile on Chitosan/rhBMP-2 Films, a Novel Osteoinductive Coating for Implantable Materials Acta Biomaterialia. 5-7, pp.2633-2646. ISSN 17427061.

34 Hortiguela, M.J.; Gutierrez, M.C.; Aranaz, I; et al; Del Monte, F. 2008. Urea assisted hydroxyapatite mineralization on MWCNT/CHI scaffolds Journal of Materials Chemistry. 18-48, pp.5933-5940. ISSN 0959-9428.

35 Abarrategi, A; Civantos, A.; Ramos, V; Sanz Casado, J.V; Lopez-Lacomba, J.L.2008. Chitosan film as rhBMP2 carrier: Delivery properties for bone tissue application Biomacromolecules. 9-2, pp.711-718. ISSN 15257797

Projects

1. From protein structure and dynamics to tailored enzymes, therapeutics, and synthetic macromolecular devices. National project. Research and development, including transfer. Degree of contribution: Researcher. At the Institute of biofunctional studies,(IEB-UCM), Madrid Spain. Name principal investigator (PI, Co-PI....): JM Sanchez Ruiz; Victor Munoz; Jose Luis Lopez Lacomba. Nº of researchers: 7. Funding entity or bodies: Ministerio de ciencia e innovacion. Type of entity: State agency. City funding entity: Madrid, Spain. Type of participation: Team member. Duration: 6 years

2. Sistemas mixtos multifuncionales de liberacion controlada multiple para ingenieria de tejidos. National project, Research and development, including transfer. Degree of contribution: Researcher. Name principal investigator (PI, Co-PI....): Jose Luis Lopez Lacomba. Nº of researchers: 5. Funding entity or bodies: Ministerio de Ciencia e Innovacion. Investigacion Type of entity: UCM. City funding entity: Madrid, Community of Madrid, Spain. Type of participation: Team member. Code according to the funding entity: SAF2011-27863. Start-End date: 01/01/2012 - 31/12/2014 Duration: 3 years.

3. Caracterizacion in vitro e in vivo de la biocompatibilidad y capacidad osteoinductora

de matrices ceramicas complejas activadas con proteinas morfodiferenciadoras.

National project. Research and development, including transfer. Degree of contribution: Researcher. Name principal investigator (PI, Co-PI....): Jose Vicente Sanz Casado

Nº of researchers: 4 Nª people/year: 4. Funding entity or bodies: Ministerio de Ciencia e innovacion. Type of entity: UCM. City funding entity: Madrid, Community of Madrid, Spain

Type of participation: Team member. Name of the program: TRACE. Code according to the funding entity: PET2008_0168_03. Duration: 2 years - 6 months

Memberships

2017-2020 Society of biomaterials (SFB), Biomedical Engineering Society (BMES),

2019-2020 European society of ceramics (ECerS) and American Ceramic Society (ACeRS)

Other Relevant Information

Patents (just as Co-author, but not the owner)

1. Allain JP., Chang, S., Koyn, Z., Civantos, A., Arias, S.L. PCT Patent Application No. CT/US18/26606 Title: Nanostructurated Polymer-Based Compositions and methods to fabricate the same. USA, 04/06/18

2. Allain JP., Pavon, JJ., Civantos, A., PCT Patent Application No. PCT/US18/026567. Title: Nanostructured Titanium-Based Compositions and Methods to Fabricate the Same. USA, 04/06/18.

3. A. Gallardo; J. Rodriguez; H. Reinheke; C.Elvira Pujalte; C. Garcia Sanchez; M. Perez Ojeda Rodriguez; E. Martinez-Campos; A. Santos-Coquillat; & A.Civantos. P201730039. Vinyl lactame based hydrogel coatings. ICTP-CSIC and UCM, Spain. 2017

4. JL Lopez Lacomba; A. Civantos; V. Ramos; R. Lopez-Cebral; B. Seijo Rey; A. Sanchez Barreiro. 201500459. Hidrogeles bioactivos y su aplicacion en regeneracion osea y cartilaginosa 2015. UCM

Awards:

2019.First award in Scientist photography in VII Congreso Espanol de Pulvimetalurgia and II Congreso Iberoamericano de Pulvimetalurgia. 26-06-2019

2018. La real Academia de Medicina y Cirugia de Valladolid: Vicente Gonzalez Calvo with the tittle: Platforms for bone regeneration based on physical hydrogels associated with BMP-2. Authors: A. Sanchez Barreiro, A. Civantos, V. Ramos, J.L. Lopez-Lacomba and R. Lopez-Cebral. 26-01-2019