BIOGRAPHICAL SKETCH

NAME:
Balandrán Juárez, Juan Carlos

eRA COMMONS USER NAME (credential, e.g., agency login): jcbalandran

POSITION TITLE:

EDUCATION/TRAINING:

INSTITUTION AND LOCATION	DEGREE	START DATE	END DATE	FIELD OF STUDY
University of Guanajuato. Guanajuato, Mexico	B.S.	01/2006	12/2011	Pharmaceutical and Biological Chemistry
Center for Research and Advanced Studies (CINVESTAV), National Polytechnique Institute. Mexico City, Mexico.	M.Sc.	09/2012	07/2014	Molecular Biomedicine
Center for Research and Advanced Studies (CINVESTAV), National Polytechnique Institute. Mexico City, Mexico.	Ph.D.	09/2014	08/2018	Molecular Biomedicine

A. Personal Statement

The major interest of the laboratory where I have been trained for past 6 years is the study of early hematopoietic differentiation of lymphoid cells in the pathogenesis of childhood acute lymphoblastic leukemia (ALL). My studies have focused on the role of the bone marrow (BM) microenvironment in the origin and maintenance of abnormal cell production using stromal cell 2-D co-culture systems. However, I have extended our findings to more natural architecture and developed novel three-dimensional patient derived organoid (PDO) structures using human BM mesenchymal stromal cells and leukemic cells derived from ALL patients, which better mimics the cellular interactions between hematopoietic cells and their niches. By using this powerful *ex-vivo* model, my major goal is to understand the pathobiology of the leukemic niche and the microenvironmental regulation of leukemic cell population dynamics within malignant BM. Of note, I have special in investigating the tumor microenvironment-associated drug resistance of primitive leukemic-initiating cells (LICs), for this plan, I will bring in my expertise in human-human personalized 3D system construction, multiparameter flow cytometry, confocal microscopy and xenotransplantation modeling to develop a high-throughput system that will provide a unique way to discover potential chemotherapeutic drugs that target LICs in the context of their supportive niche.

B. Positions and Honors

Positions

- Part time professor. Immunology and Clinical Laboratory. School of Sciences. University of the Americas Puebla (UDLAP) (2018-present).
- Part time professor. Immunology Department. Benemérita Universidad Autónoma de Puebla (BUAP). (2017-present).
- Visiting PhD student. Department of Hematology and Medical Oncology. PI: Monica L. Guzman, PhD. Weill Cornell Medicine. New York, NY, USA. (2014-present).
- MSc and PhD student at the Oncoimmunology Lab. PI: Rosana Pelayo, PhD. Centro de Investigación Biomédica de Oriente, IMSS, Puebla (2012-present).

Honors

- First place. “Samuel Dorantes” Hematology Prize. AMEH (2019).
- Second place. “Samuel Dorantes” Hematology Prize. AMEH (2018).
- Society for Leukocyte Biology Trainee Award (2018).
- Pediatric Oncology Student Training (POST) Award – Alex’s Lemonade Stand Foundation (2014)
- Honorable mention. Undergraduate studies. University of Guanajuato (2011).
- 21th Scientific Research Summer Program. Mexican Academy of Sciences (2011).
- 16th Scientific Research Summer Program. University of Guanajuato (2010).

Other Distinctions

- Best GPA in B.S. major: Pharmaceutical Chemistry in the Outstanding Alumni Annual Ceremony of the University of Guanajuato 2008, 2009 and 2010.
- Best oral presentation in the 16th Summer Program for Scientific Research at the University of Guanajuato (2010). Cancun, Mexico.
- First Place in the oral presentation modality and 2nd place in poster presentation at the 3rd Symposium on Applications in Flow Cytometry BD Biosciences (2013). Mexico City, Mexico.
- International Scholarship to attend First International Oncoimmunology Course – IUIS, ALAI and SMI; San
- Miguel de Allende, Guanajuato, Mexico (2016).
- Immunopaedia Ambassador; International Union of Immunological Societies. (2017 – to the date).
- First place in poster presentation. XII Congress of the Latin American Association of Immunology – ALAI. Cancún, México (2018).
- Finalist at the LANGEBIO prize (2019).

Professional Memberships

- Mexican Society of Immunology (2012-present)
- International Society of Experimental Hematology and Stem Cells (2014-present)
- Mexican Society of Stem Cell Research (2014-present)
- Mexican College for Cancer Research (2017-present)
- Society for Leukocyte Biology (2018)

Publications

- Juárez-Avendaño G, Luna-Silva NC, Juárez-Martínez LA, Martínez-Rangel MN, Zárate-Ortiz N, Martínez-Valencia E, Pelayo R & **Balandrán JC**. “A paradigm shift in biomolecular risk indicators in Childhood leukemia in Oaxaca: report from Laboratorio Juárez”. Manuscript under revision in TCRT (2019).
- Gutiérrez de Anda KV, Juárez-Martínez L, Juárez-Avendaño G, Pelayo R and **Balandrán JC**. “En la era de la inmunoterapia: las alergias como blanco de interés”. Submitted to Rev IMSS (2019).
- Ramírez-Ramírez D, Padilla-Castañeda S, Galán-Enriquez CS, **Balandrán JC** et al. “Crtam^{+} NK Cells Endowed With Suppressor Properties Arise in Leukemic Bone Marrow”. J Leukoc Biol (2019).
- Velázquez-Ávila M, **Balandrán JC** et. al. “High cortactin expression in B-cell acute lymphoblastic leukemia is associated with increased transendothelial migration and bone marrow relapse”. Leukemia (2018)
- Kourtis N, Charampos L, Hockemeyer K, **Balandrán JC** et al. “Oncogenic hijacking of the stress response machinery in T cell acute lymphoblastic leukemia”. Nature Medicine (2018)
- Espinoza-Sánchez NA, Vadillo E, **Balandrán JC** et al. “Evidence of lateral trasmission of aggressive features between different types of breast cancer cells”. International Journal of Oncology (2017)
- **Balandrán JC** et al. Pro-inflammatory-related loss of CXCL12 niche promotes acute lymphoblastic leukemia at expenses of normal lymphopoiesis; Frontiers in Immunology (2017)
- **Balandrán JC** et al. Analysis of Hematopoietic Stem and Progenitor Cells contents in childhood acute leukemia bone marrow; Archives of Medical Research (2016)
- **Balandrán JC**, Pelayo R. Ontogenia de los linfocitos B. Rev Alerg Méx (2016)
- Dorantes-Acosta E, Vadillo E, Contreras-Quiroz A, **Balandrán JC**, Arriaga-Pizano L, Purizaca J, Huerta-Yepez S, Jiménez E, Aguilera W, Medina-Sanson A, Mayani H and Pelayo R. TLR stimulation of bone marrow lymphoid precursors from childhood acute leukemia modifies their differentiation potentials. Biomed Res Int (2013).

Book chapters

- Pelayo R, **Balandrán JC**, & Ruiz-Argüelles A. Ontogenia de a Inmunidad. Capítulo VI Inmunología. En Así es la Medicina. Academia Nacional de Medicina (2018).
- Enciso J, **Balandrán JC** & Rosana Pelayo. "The Pathobiological Complexity of Childhood Cancer: Acute Leukemias as a Paradigm of Study" In "Cancer: a complex disease". Álvarez-Buylla Roces M.E., Martinez-Garcia JC, Dávila-Velderrain J, Domínguez-Hüttinger E et al. (Eds). Springer International Publishing (2018)
- **Juan Carlos Balandrán**, Jennifer Enciso & Rosana Pelayo. El sistema hematopoyético como paradigma de la diferenciación. En: "Células Troncales: Biología y Aplicaciones en Biomedicina", Monica Lamas, Antonieta Chavez-Gonzalez, Jesus Chimal & Eugenia Flores-Figueroa, (Eds). Ed. Porrúa (2017)

Oral and Poster Presentations.

- **Balandrán JC**. Oral. "Patobiología de la leucemia aguda infantil". 6º Ciclo de Conferencias por el Día Internacional del Cáncer Infantil. UNE UPAEP, Puebla (2019).
- **Balandrán JC**, Ortiz-Navarrete V, Guzman ML & Pelayo R. Oral. "Bone marrow organoid-like reveals functional hierarchy governed by the niche in B-cell leukemia-initiating cells". XII Congress of the Latin American Association of Immunology – ALAI. Cancún, México (2018).
- **Balandrán JC** et al. Oral. "A NOVEL BONE MARROW ORGANOID-LIKE CO-CULTURE SYSTEM CAN MAINTAIN LEUKEMIA-INITIATING CELLS FROM ACUTE LYMPHOBLASTIC LEUKEMIA". IV Congreso de Células Troncales y Medicina Regenerativa. Querétaro, México (2017).
- **Balandrán JC**, Purizaca J, Jiménez-Hernández E, Mayani H, Ortiz-Navarrete V, Guzman ML, Pelayo R. Poster. "Pro-inflammatory-related loss of CXCL12 niche promotes acute lymphoblastic leukemia at expenses of normal lymphopoiesis". First International Oncoimmunology Course. SMA, Guanajuato, Mexico (2016).
- **Balandrán JC**, Enciso J, Piña-Sánchez P, Espinoza-Sánchez NA, Vadillo E, Purizaca J, Jiménez-Hernández E, Mayani H, Ortiz-Navarrete V, Guzman ML, Pelayo R. Poster. "A novel three-dimensional co-culture system can maintain leukemic hematopoiesis". ISEH 44th Annual Scientific Meeting. Kyoto, Japan (2015).
- **Balandrán JC**, Enciso J, Piña-Sánchez P, Espinoza-Sánchez NA, Vadillo E, Purizaca J, Jiménez-Hernández E, Mayani H, Ortiz-Navarrete V, Pelayo R. Poster "Generation of a three-dimensional culture for Maintaining the CD34+ leukemic precursors". III Symposium on Applications in Flow Cytometry BD Biosciences. Mexico City, Mexico (2014).
- **Balandrán JC**, Dorantes-Acosta E, Vadillo E, Contreras-Quiroz A, Purizaca J, Montoya C, Chávez-González A, Jiménez-Hernández E, Medina-Sansón A, Villagómez H, Fuentes S, Mayani H, Arriaga-Pizano L, Pelayo R. Poster. "Toll-like receptors lead changes in the lineage of origin childhood leukemias". 20th National Congress of Immunology. (2012).