

Prof. Ana Ivonne Vazquez-Armendariz

Life & Medical Sciences Institute



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Institute

Life and Medical Sciences (LIMES) Institute

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Research Expertise

The Vazquez-Armendariz lab primarily focuses on the use of three-dimensional lung organoid systems from murine and human adult somatic stem cells and human induced pluripotent stem cells (iPSCs) to model lung development and disease. Our research goal is to dissect the cellular and molecular crosstalk between lung epithelium and immune cells occurring during lung development, infection, injury and repair; especially, our lab aims at identifying the microenvironmental factors that determine macrophage phenotype during alveolar niche development and replenishment after injury.

Education / Training

2018 Dissertation, University of Justus-Liebig Giessen, summa cum laude: "Establishment of murine 3D bronchioalveolar lung organoids from adult somatic stem cells for organ development and disease modeling" (Supervisor: Prof. Dr. Susanne Herold)

2013 - 2015 International Graduate Program "Molecular Biology and Medicine of the Lung" (MBML) as part of the Giessen Graduate School of the Life Sciences (GGL)

2004 - 2009 Clinical Biochemistry Program, University of Nuevo León, Faculty of Medicine, Mexico

2010 - 2012 M.Sc. in Molecular Medicine program, University of medicine Charité, Germany

Appointments / Positions Held

2023 - present Argelander Junior professor for Organoid Biology at the University of Bonn, Germany

2021 - 2023 Junior Group Leader at the Institute for Lung Health (ILH) of the research group "Lung organoids and disease modelling", at the Justus-Liebig University Giessen (JLU), Germany

2018 - 2021 Postdoctoral fellow in the Department of Internal Medicine at the Universitätsklinikum Gießen und Marburg (UKGM)

2021 - 2023 Deputy director of the MBML International Graduate Program

Honors / Awards

2018 ATS International Trainee Travel Scholarship Award 2018
2018 Tutor of the MBML International Graduate Program for the PhD students

2017 ATS Abstract Scholarship Award and Science and Innovation Abstract Award

2015 MBML Travel Award, 1st price in student examination

2010 Full scholarship awarded by the National Council of Science and Technology (CONACYT) in México to pursue my master degree in Molecular Medicine

2009 Academic merit award given by the Autonomous University of Nuevo León for the best student within each discipline.

5 Most Relevant Publications for Prof. Vazquez-Armendariz

1. **Vazquez-Armendariz AI**, Barroso MM, El Agha E, Herold S. "3D In Vitro Models: Novel Insights into Idiopathic Pulmonary Fibrosis Pathophysiology and Drug Screening". *Cells*. 2022 May 2;11(9):1526. doi: 10.3390/cells11091526.

2. **Vazquez-Armendariz AI**, Seeger W, Herold S, El Agha E. "Protocol for the generation of murine bronchiolospheres". *STAR Protoc*. 2021.doi.org/10.1016/j.xpro.2021.100594.

3. **Vazquez-Armendariz AI**, Herold S. "From clones to buds and branches: The use of lung organoids to model branching morphogenesis ex vivo". *Front Cell Dev Biol*, 2021 Mar 4;9:631579. doi: 10.3389/fcell.2021.631579. eCollection 2021.

4. **Vazquez-Armendariz AI**, Heiner M, El Agha E, Salwig I, Hoek A, Hessler MC, Shalashova I, Shrestha A, Carraro G, Mengel JP, Günther A, Morty R, Vadasz I, Schwemmle M, Kummer, W, Hain T, Goesmann A, Bellusci S, Seeger W, Braun T, Herold S. "Multilineage murine stem cells generate complex organoids to model distal lung development and disease". *EMBO J*, 2020 Oct 28; e103476. doi: 10.15252/embj.2019103476, 2020.

5. Moiseenko A, **Vazquez-Armendariz AI**, Kheirollahi V, Chu X, Tata A, Rivetti S, Günther S, Lebrigand K, Herold S, Braun T, Mari B, De Langhe S, Kwapiszewska G, Günther A, Chen C, Seeger W, Tata RP, Zhang JS, Bellusci S, El Agha E. "Identification of a repair-supportive mesenchymal cell (RSMC) population during airway epithelial regeneration". *Cell Reports*, 2020 Dec 22;33(12):108549. doi: 10.1016/j.celrep.2020.108549.