Sheila N. López Acevedo, Ph.D.

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PROFESIONAL SUMMARY

Accomplished Immunology Scientist with expertise in translational research, oncology, and immunotherapy. Specializing in investigating immunotherapies, tumor immunoregulation, and developing novel immunotherapeutics for colorectal cancer. Skilled in modulating the immune system for enhanced antitumor activity through innovative combination therapies. Proficient in characterizing immune evasion mechanisms in early colorectal cancer stages and immune signatures in advanced onset. Experienced in technology transfer, preclinical study design, and high-throughput flow cytometry for CAR-NK cell therapy products, ensuring compliance with cGMPs and SOPs while providing technical support across manufacturing operations.

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PROFESSIONAL EXPERIENCE

Immunology Scientist II at Comprehensive Cancer Center, Clinical & Translational Research Division (2024)

- Investigating Immunotherapies: Conducting research to understand how combination immunotherapies and non-immune-based therapies impact colorectal tumor cells.
- Studying Tumor Immunoregulation: Investigating mechanisms of tumor progression, metastasis, and resistance
- Developing Novel Immunotherapeutics: Focusing on the development of innovative immunotherapies, especially in combination with other immune-mediating modalities and conventional or experimental therapies as part of an immuno-oncology programmatic effort
- Modulating the Immune System: Examining how we can modulate the immune system to enhance antitumor activity, with a particular emphasis on maximizing antitumor activity through exploiting mechanisms involved in combination therapies.
- Characterizing distinct Immune Signature in Early Onset Colorectal Cancer
- Focused on immune evasion mechanisms in early and advanced stage colorectal cancer and the inflammatory profile.

Senior Research Scientist, Process Development at CytoImmune Therapeutics (2021-2024)

- Facilitated the seamless transfer of technology to a GMP manufacturing site, demonstrating adeptness in troubleshooting multi-discipline problems and ensuring successful implementation.
- Designed and executed preclinical studies crucial for the IND package of a revolutionary CAR-NK cell therapy product, applying scientific and engineering principles to develop evaluation criteria and techniques for obtaining results.
- Led the design and execution of high-throughput flow cytometry characterization studies for our biologic product (CAR-NKs), showcasing proficiency in experimental design and analytical testing, supporting process development assays and product qualification studies.
- Generated and meticulously maintained master banks of cell lines essential for in vitro studies, ensuring availability of materials for production activities.
- Innovated and implemented new experimental protocols, such as Vector Copy Number and gene expression analysis, in support of cell and viral therapy approaches.
- Spearheaded the CAR-NK cell expansion process and feeder cell line development and optimization, demonstrating hands-on expertise in a broad range of experimental techniques.
- Documented data with precision, adhering to applicable lab procedures and current documentation practices, including timely correction of manufacturing batch record discrepancies.
- Collaborated seamlessly within cross-functional teams, providing technical assistance and troubleshooting support for equipment and process events in manufacturing areas.
- Conducted equipment and facility inspections, monitoring critical parameters and advising on any deviations impacting operations or environmental conditions.
- Documented process and equipment status in electronic or manual records, ensuring strict

adherence to current Good Manufacturing Practices (cGMPs) and Standard Operating Procedures (SOPs).
- Collected and processed samples as required by the production process, complying with all EHS procedures and policies, including incident reporting, use of PPE, and waste management and disposal.
- Aided operations in accordance with environmental management, occupational health, and safety (EHS) systems, promoting continuous improvement initiatives.
- Experience in supervising, mentoring, and expertly training junior members.

Postdoctoral Researcher at The University of Kansas (2018-2021)
- Focused on the single-cell emulsification antibody-sequencing platform that allows the collection of the full antibody sequences (heavy and light chains of the antibody variable region) from over one million single B cells at a time.
- Gained experience with RT-PCR-based DNA molecular engineering, massively parallel emulsion droplet reactions, next generation DNA sequencing, and high-throughput computational analysis for the purpose of discovering antibodies that neutralize viral pathogens, to understand the immune response to viruses and to develop new treatment and prevention options in human patients and animal models.
- Experience in supervising, mentoring, and expertly training junior members.

ACADEMIC PREPARATION

2011-2017 *Ph.D Degree in Cellular and Molecular Biology.* Universidad Central del Caribe, School of Medicine, Microbiology and Immunology Department, Biomedical Proteomics Facility, Bayamon, PR, 00960. PhD Dissertation Defense entitled *"HIV-1 Interclade Effects of Gp120 and Tat Proteins on Astrocytoma".*
- Focused on the effects of HIV-1 gp120 and Tat clade B and C proteins and how they exert differential proliferation, survival and NeuroAIDS effects in human astrocytoma cells via the Unfolded Protein Response, an endoplasmic reticulum- based cytoprotective mechanism.

2006-2011 *Bachelor's degree in Biomedical Sciences.*
University of Puerto Rico in Aguadilla Campus, Aguadilla, PR, 00604

PUBLICATIONS

Cell activation-based screening of natively paired human T cell receptor repertoires. Fahad A.S., et al. Sci Rep. 2023 May 17;13(1):8011. doi: 10.1038/s41598-023-31858-4

Large-scale antibody immune response mapping of splenic B cells and bone marrow plasma cells in a transgenic mouse model. Pan X., et al. Frontiers Immunology. Vol. 14, June 2023. doi:10.3389/fimmu.2023.1137069

Mapping monoclonal anti-SARS-CoV-2 antibody repertoires against diverse coronavirus antigens. de Souza MO, et al. Front Immunol. 2022 Sep 2;13:977064. doi: 10.3389/fimmu.2022.977064. eCollection 2022.

Quality Control: Chain Pairing Precision and Monitoring of Cross-Sample Contamination: A Method by the AIRR Community. Chung CY, et al. AIRR Community. Methods Mol Biol. 2022;2453:423-437. doi: 10.1007/978-1-0716-2115-8_21.

Immortalization and functional screening of natively paired human T cell receptor repertoires. Fahad A.S., et al. PEDS.2022 Feb 17; https://doi.org/10.1093/protein/gzab034.

Molecular probes of spike ectodomain and its subdomains for SARS-CoV-2 variants, Alpha through Omicron. Teng IT et al. PLoS One. 2022 May 24;17(5):e0268767. doi: 10.1371/journal.pone.0268767. eCollection 2022.

Paired heavy and light chain signatures contribute to potent SARS-CoV-2 neutralization in public antibody responses. Banach BB.*,* et al. Cell Rep. 2021 Oct 5; 109771, doi: 10.1101/2020.12.31.424987.

Antibody screening at reduced pH enables preferential selection of potently neutralizing antibodies targeting SARS-CoV-2. Madan B., et al. AIChE Journal. 2021 Dec 20; https://doi.org/10.1002/aic.17440.

Structure-Based Design with Tag-Based Purification and In-Process Biotinylation Enable Streamlined Development of SARS-CoV-2 Spike Molecular Probes. Zhou, T., et al. Cell Rep., 2020. 33(4): p. 108322, https://doi.org/10.1016/j.celrep.2020.108322.

Ultrasonically Guided Flow Focusing Generates Precise Emulsion Droplets for High-Throughput Single Cell Analyses. Colton E.L.et al., Journal of Bioscience and Bioengineering, 2019, Volume 128, Issue 2, Pages 226-233, https://doi.org/10.1016/j.jbiosc.2019.01.020.

Naturally Derived Anti-HIV Polysaccharide Peptide (PSP) Triggers a Toll-Like Receptor 4 dependent antiviral immune response. Rodriguez M. et al., Journal of Immunology Research, 2018, https://doi.org/10.1155/2018/8741698

HIV-1 envelope protein gp120 promotes proliferation and the activation of glycolysis in glioma cell. Valentin Guillama G. et al., Cancers 2018, 10(9), 301; https://doi.org/10.3390/cancers10090301

Targeting Multiple Pro-apoptotic Signaling Pathways with Curcumin in Prostate Cancer Cells. Rivera M. et al., PLoS ONE, 2017, 12(6): e0179587; https://doi.org/10.1371/journal.pone.0179587

HIV-1 Gp120 Clade B/C Induce a Grp78 driven UPR Cytoprotective Mechanism in Astrocytoma. Lopez S.N. Oncotarget, 2017, Sep 15; 8(40): 68415–68438. doi:10.18632/oncotarget.19474

CERTIFICATIONS

2023 Clinical Trials Operation Specialization. From Johns Hopkins University, offered by Coursera. No expiration. Credential ID: 48LDM7QG7ZYU

2024 *Workplace Bloodborne Pathogens.* Expires Jan 2025

2023 *Shipping Hazardous Materials by Air (IATA/ICAO).* Hazmat Training, Inc. Expires June 2025.

TEACHING EXPERIENCE

2021 *"Molecular Biology Laboratory"* Undergraduate class course. The University of Kansas-Edwards Campus, KS USA.

2020 *"Pharmaceutical Calculations"* Undergraduate class course. The University of Kansas, School of Pharmacy-Lawrence Campus, KS, USA.

SKILLS

- Advanced understanding of immune system function and molecular biology
- Proficiency in PRISM-GraphPad, FlowJo, and FACSDiva software for comprehensive flow cytometry data analysis

- Extensive experience in standard molecular and cell biology techniques, including mammalian cell culture, primary cell culture, multi-colored flow cytometry, SDS-PAGE, ELISA, RT-PCR, electrophoresis, nucleic acid isolation and purification, fluorescence microscopy, and western blot.
- Strong skills in blood handling, processing, and expertise in various immune cell isolation techniques, including magnetic activating cell sorting.
- Familiarity with BSL2 and ISO 7/8 Manufacturing environments
- Exceptional multitasking abilities and expertise in the development and execution of complex research methods.
- Strong interdisciplinary communication and analytical skills, showcasing good organization of scientific data and the ability to meet designated experimental timelines.
- Experience in supervising, mentoring, and expertly training junior members.
- Assistance with grant, manuscripts, and technical reports writing.
- Effective workload prioritization with meticulous attention to detail and accuracy, essential for managing responsibilities and ensuring high-quality outcomes.
- Fluent in English and Spanish
- Excellent written and verbal communication skills
- Strong analytical and problem-solving abilities
- Adherence to Good Manufacturing Practices (GMP) and Standard Operating Procedures (SOPs)
- Expertise in technology transfer, process development, and validation activities
- Expertise in immunology functional assays such as: cell infiltration analysis, cytokine profiling, tumor-infiltrating lymphocyte (TIL) assay, immune checkpoint expression and T cell proliferation and activation assays.