

# Stanford

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## Pablo Domizi, Ph.D.

Instructor, Pediatrics - Hematology & Oncology

### Bio

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#### BIO

I am passionate about translational research and how single cell technologies could open up new avenues for better and more accurate predictive models. Currently, I am focus on integrating single cell RNA and protein expression data to develop models to predict patient at risk for Antigen Loss relapse after CAR T cells immunotherapy.

#### ACADEMIC APPOINTMENTS

- Instructor, Pediatrics - Hematology & Oncology

#### HONORS AND AWARDS

- ASH Scholar Award, American Society of Hematology (2022 - 2024)
- Best Abstracts Award, Transplantation & Cellular Therapy Meetings of ASTCT and CIBMTR (2022)
- Outstanding Oral Presentation, 12th Annual Pediatrics Research Retreat (2021)
- Abstract selected for 6th Annual Immuno-Oncology Young Investigators' Forum, Immuno-Oncology Young Investigators' Forum (2020)
- ASH Abstract Achievement Award for the 2019 ASH Annual Meeting, American Society of Hematology (2019)
- Charles B. Carrington Memorial Award for Outstanding Poster Presentation, Stanford Pathology Annual Research Retreat. (2017)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Society for ImmunoTherapy of Cancer (SITC) (2020 - present)
- Member, American Society of Hematology (ASH) (2018 - present)
- Member, American Association for Cancer Research (AACR) (2018 - present)

#### PROFESSIONAL EDUCATION

- Ph.D., National University of Rosario. Argentina. (2015)
- B.Sc., National University of Rosario. Argentina. (2009)

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

CD19-directed chimeric antigen receptor T cell (CAR-T) therapy has shown impressive results in children and adults with relapsed or refractory (r/r) B-ALL or non-Hodgkin lymphoma. However, 30 – 70% of initial responders will eventually relapse with CD19 antigen loss (CD19Neg). The development of tools to accurately predict which patients are at risk for CD19Neg relapse would guide treatment decisions regarding alternative therapies.

The goal of my research is to develop a model to predict which patients are at risk for CD19Neg relapse.

I hypothesize that resistant tumor cells, and their features associated with CD19Neg relapse, are present before CAR-T administration and can be detected and used to build a model to predict which patients are at risk for CD19Neg relapse. To that end, I used a combination of single cell mass cytometry (CyTOF) and simultaneous whole transcriptome analysis and antibodies sequencing (WTA-AbSeq) data from B-ALL patient samples collected before or after CD19-directed CAR-T administration. Through these analyses I expect to identify and deeply characterize those tumor populations present before CAR-T administration responsible for CD19Neg relapse.

## Publications

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### PUBLICATIONS

- **IKAROS MEDIATES ANTIGEN ESCAPE FOLLOWING CD19 CAR T CELL THERAPY IN R/R B-ALL**  
Domizi, P., Sarno, J., Jager, A., Rotiroti, M., Baskar, R., Reynolds, W., Sahaf, B., Bendall, S., Mullighan, C., Leahy, A., Myers, R., Grupp, S., Majzner, et al  
WILEY.2022
- **CytofIn enables integrated analysis of public mass cytometry datasets using generalized anchors.** *Nature communications*  
Lo, Y., Keyes, T. J., Jager, A., Sarno, J., Domizi, P., Majeti, R., Sakamoto, K. M., Lacayo, N., Mullighan, C. G., Waters, J., Sahaf, B., Bendall, S. C., Davis, et al  
2022; 13 (1): 934
- **Chromatin Content Capture Reveals Acute Leukaemia Oncogenic Vulnerability Point in Human B Cell Development**  
Baskar, R., Favaro, P., Reynolds, W. D., Domizi, P., Tsai, A. G., Davis, K. L., Bendall, S.  
AMER SOC HEMATOLOGY.2021
- **Ikaros Mediates Antigen Escape Following CD19 CAR T Cell Therapy in r/r B-ALL**  
Domizi, P., Sarno, J., Jager, A., Baskar, R., Reynolds, W. D., Sahaf, B., Bendall, S., Mullighan, C. G., Leahy, A., Myers, R. M., Grupp, S. A., Sotillo, E., Barrett, et al  
AMER SOC HEMATOLOGY.2021
- **Glucocorticoid-Resistant B-Cell Acute Lymphoblastic Leukemic Cells Can be Targeted By BCR-Signaling Inhibition**  
Sarno, J., Domizi, P., Liu, Y., Merchant, M., Jedoui, D., Jager, A., Biondi, A., Gaipa, G., Bava, A., Davis, K. L.  
AMER SOC HEMATOLOGY.2021
- **In-depth triacylglycerol profiling using MS3 Q-Trap mass spectrometry.** *Analytica chimica acta*  
Cabruja, M., Priotti, J., Domizi, P., Papsdorf, K., Kroetz, D. L., Brunet, A., Contrepolis, K., Snyder, M. P.  
2021; 1184: 339023
- **A Cancer Biologist's Primer on Machine Learning Applications in High-Dimensional Cytometry.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*  
Keyes, T. J., Domizi, P., Lo, Y., Nolan, G. P., Davis, K. L.  
2020
- **Expansion of Bone Precursors through Jun as a Novel Treatment for Osteoporosis-Associated Fractures.** *Stem cell reports*  
Lerbs, T., Cui, L., Muscat, C., Saleem, A., van Neste, C., Domizi, P., Chan, C., Wernig, G.  
2020
- **Activation of JUN in fibroblasts promotes pro-fibrotic programme and modulates protective immunity.** *Nature communications*  
Cui, L. n., Chen, S. Y., Lerbs, T. n., Lee, J. W., Domizi, P. n., Gordon, S. n., Kim, Y. H., Nolan, G. n., Betancur, P. n., Wernig, G. n.  
2020; 11 (1): 2795
- **Prediction of Patients at Risk of CD19(Neg) Relapse Following CD19-Directed CAR T Cell Therapy in B Cell Precursor Acute Lymphoblastic Leukemia**  
Domizi, P., Jager, A., Sarno, J., Mullighan, C. G., Grupp, S., Sotillo, E., Barrett, D. M., Davis, K. L.  
AMER SOC HEMATOLOGY.2019
- **Preconditioning of Rat Bone Marrow-Derived Mesenchymal Stromal Cells with Toll-Like Receptor Agonists.** *Stem cells international*  
Evaristo-Mendonça, F., Sardella-Silva, G., Kasai-Brunswick, T. H., Campos, R. M., Domizi, P., Santiago, M. F., de Melo Reis, R. A., Mendez-Otero, R., Ribeiro-Resende, V. T., Pimentel-Coelho, P. M.  
2019; 2019: 7692973
- **Generation of patient-specific pluripotent induced stem cell line UFRJi007-A from a Brazilian familial amyotrophic lateral sclerosis patient.** *Stem cell research*

- Gubert, F., Vasques, J. F., Cozendey, T. D., Domizi, P., Toledo, M. F., Kasai-Brunswick, T. H., Hochman-Mendez, C., Junior, M. C., Zembrzuski, V. M., Loureiro, M. P., Lima, J. M., Gress, C. H., Cabello, et al  
2019; 39: 101490
- **Generation of four patient-specific pluripotent induced stem cell lines from two Brazilian patients with amyotrophic lateral sclerosis and two healthy subjects.** *Stem cell research*  
Gubert, F., Vasques, J. F., Cozendey, T. D., Domizi, P., Toledo, M. F., Kasai-Brunswick, T. H., Loureiro, M. P., Lima, J. M., Gress, C. H., Cabello, G. M., Cabello, P. H., Borgonovo, T., Vaz, et al  
2019; 37: 101448
  - **Direct targeting of the mouse optic nerve for therapeutic delivery** *JOURNAL OF NEUROSCIENCE METHODS*  
Mesentier-Louro, L. A., Dodd, R., Domizi, P., Nobuta, H., Wernig, M., Wernig, G., Liao, Y.  
2019; 313: 1–5
  - **KDM2B regulates choline kinase expression and neuronal differentiation of neuroblastoma cells.** *PloS one*  
Domizi, P., Malizia, F., Chazarreta-Cifre, L., Diacovich, L., Banchio, C.  
2019; 14 (1): e0210207
  - **High-efficiency CRISPR induction of t(9;11) chromosomal translocations and acute leukemias in human blood stem cells.** *Blood advances*  
Jeong, J. n., Jager, A. n., Domizi, P. n., Pavel-Dinu, M. n., Gojenola, L. n., Iwasaki, M. n., Wei, M. C., Pan, F. n., Zehnder, J. L., Porteus, M. H., Davis, K. L., Cleary, M. L.  
2019; 3 (19): 2825–35
  - **Direct targeting of the mouse optic nerve for therapeutic delivery.** *Journal of neuroscience methods*  
Mesentier-Louro, L. A., Dodd, R., Domizi, P., Nobuta, H., Wernig, M., Wernig, G., Liao, Y. J.  
2018
  - **Stem cell therapy for treatment of ischemic optic neuropathy**  
Mesentier-Louro, L., Yang, N., Shariati, A., Domizi, P., Dodd, R., Wernig, G., Wernig, M., Liao, Y.  
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018
  - **Therapeutic effects of sphingosine kinase inhibitor N,N-dimethylsphingosine (DMS) in experimental chronic Chagas disease cardiomyopathy.** *Scientific reports*  
Vasconcelos, J. F., Meira, C. S., Silva, D. N., Nonaka, C. K., Daltro, P. S., Macambira, S. G., Domizi, P. D., Borges, V. M., Ribeiro-Dos-Santos, R., de Freitas Souza, B. S., Soares, M. B.  
2017; 7 (1): 6171
  - **Lysophosphatidylcholine Drives Neuroblast Cell Fate.** *Molecular neurobiology*  
Paoletti, L., Domizi, P., Marcucci, H., Montaner, A., Krapf, D., Salvador, G., Banchio, C.  
2016; 53 (9): 6316-6331
  - **G-quadruplexes as novel cis-elements controlling transcription during embryonic development.** *Nucleic acids research*  
David, A. P., Margarit, E., Domizi, P., Banchio, C., Armas, P., Calcaterra, N. B.  
2016; 44 (9): 4163-73
  - **Coordinated induction of GST and MRP2 by cAMP in Caco-2 cells: Role of protein kinase A signaling pathway and toxicological relevance.** *Toxicology and applied pharmacology*  
Arana, M. R., Tocchetti, G. N., Domizi, P., Arias, A., Rigalli, J. P., Ruiz, M. L., Luquita, M. G., Banchio, C., Mottino, A. D., Villanueva, S. S.  
2015; 287 (2): 178-190
  - **Choline kinase alpha expression during RA-induced neuronal differentiation: role of C/EBP#.** *Biochimica et biophysica acta*  
Domizi, P., Aoyama, C., Banchio, C.  
2014; 1841 (4): 544-51
  - **Role of phosphatidylcholine during neuronal differentiation.** *IUBMB life*  
Paoletti, L., Elena, C., Domizi, P., Banchio, C.  
2011; 63 (9): 714-20

## PRESENTATIONS

- Ikaros Mediates Antigen Escape Following CD19 CAR T Cell Therapy in r/r B-ALL - 2021 63rd ASH annual meeting

- Identification of Cell Populations Associated with CD19Neg Relapse Following CAR T Cell Therapy in Acute Lymphoblastic Leukemia - 2021 TCT| Transplantation & Cellular Therapy Meetings of ASTCT and CIBMTR
- Prediction of Patients at Risk of CD19Neg Relapse Following CD19-Directed CAR T Cell Therapy in B Cell Precursor Acute Lymphoblastic Leukemia - 61st ASH Annual Meeting & Exposition. (December 7, 2019 - December 10, 2019)