



Alma-Martina Cepika

Instructor, Pediatrics - Stem Cell Transplantation

Bio

BIO

Dr. Cepika is an immunologist with an extensive background in translational research, autoimmunity, autoinflammation, and human systems immunology. Her goal is to understand the mechanisms governing immunological tolerance, and to leverage this knowledge to cure currently incurable diseases.

Dr. Cepika received her MD degree and a PhD in Immunology from the University of Zagreb School of Medicine in Croatia. There, she focused on the immunomonitoring of patients with lupus, identifying how circulating DNA levels changed with therapy. Subsequently, she joined the lab of Dr. Virginia Pascual at the Baylor Institute for Immunology Research in Dallas, Texas. Dr. Pascual had previously discovered that IL-1beta is a key pathogenic player in systemic juvenile idiopathic arthritis (sJIA), but the immune alterations contributing to IL-1beta-mediated inflammation remained unknown. To address this, Dr. Cepika developed a 3D in vitro stimulation assay to evaluate immune responses of blood leukocytes of pediatric sJIA patients. In combination with integrated bioinformatics analysis, this approach identified aberrant cellular responses, transcriptional pathways and genes that shed new light on immune dysregulation in sJIA. This assay (tollgene.org) can be further applied to dissect underlying immunopathogenic mechanisms in many human disorders.

Currently, Dr. Cepika is an Instructor in the Pediatric Division of Stem Cell Biology and Regenerative Medicine at Stanford University School of Medicine. There, she is working to uncover the underlying molecular mechanisms that govern the differentiation and function of antigen-inducible regulatory T cells called type 1 regulatory T (Tr1) cells, and use this knowledge to design Tr1 cell-based therapies to improve the outcomes of patients with cancer, autoimmunity, or receiving allogeneic cell or organ transplants.

ACADEMIC APPOINTMENTS

- Instructor, Pediatrics - Stem Cell Transplantation
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute

HONORS AND AWARDS

- Career Development Award, American Society for Gene + Cell Therapy (2022)
- Translational Research Grant, SPARK at Stanford (2022)
- Early Career Research Grant, National Blood Foundation (2021)
- Pilot Grant (competitive renewal), Translational Research and Applied Medicine (TRAM) Center, Stanford Medicine (2021)
- Pilot Grant, Translational Research and Applied Medicine (TRAM) Center, Stanford Medicine (2020)
- Best Short Talk Award, North Texas Flow Cytometry Conference (2016)

- Best Poster Award, ESF-EMBO symposium, "B cells: Complexity, Integration and Translation" (2008)
- Full Scholarship, Leadership and Management of Health Services, Andrija Stampar School of Public Health, School of Medicine, University of Zagreb (2006)
- Best Poster Award, Annual Meeting of Croatian Immunological Society (2005)
- Dean's Award for Best Student Research, School of Medicine, University of Zagreb (2002)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- member, American Society for Cell and Gene Therapy (2020 - present)
- member, Federation of Clinical Immunology Societies (FOCIS) (2017 - present)
- member, Society for Immunotherapy of Cancer (SITC) (2017 - 2019)
- member, Croatian Medical Chamber (2004 - present)
- member, Croatian Society for Immunology (2004 - 2010)

PROFESSIONAL EDUCATION

- Post-Doctoral Fellow, Baylor Institute For Immunology Research , Immunology / Autoinflammation (2016)
- PhD, School of Medicine, University of Zagreb , Immunology (2012)
- MD, School of Medicine, University of Zagreb , Medicine (2002)

LINKS

- Google Scholar Profile: <https://scholar.google.com/citations?user=Dg3BC8UAAAAJ&hl=en>
- LinkedIn Profile: <https://www.linkedin.com/in/acepika/>
- Roncarolo laboratory: <https://med.stanford.edu/roncarololab.html>
- TollGene blood stimulation assay: <http://tollgene.org/>

Publications

PUBLICATIONS

- **Alloantigen-specific type 1 regulatory T cells suppress through CTLA-4 and PD-1 pathways and persist long-term in patients.** *Science translational medicine*
Chen, P. P., Cepika, A., Agarwal-Hashmi, R., Saini, G., Uyeda, M. J., Louis, D. M., Cieniewicz, B., Narula, M., Amaya Hernandez, L. C., Harre, N., Xu, L., Thomas, B. C., Ji, et al
2021; 13 (617): eabf5264
- **Engineered type 1 regulatory T cells designed for clinical use kill primary pediatric acute myeloid leukemia cells** *Haematologica*
Cieniewicz, B., Uyeda, M. J., Chen, P. P., Sayitoglu, E. C., Liu, J. M., Andolfi, G., Greenthal, K., Bertaina, A., Gregori, S., Bacchetta, R., Lacayo, N. J., Cepika, A., Roncarolo, et al
2020
- **Tregopathies: Monogenic diseases resulting in regulatory T-cell deficiency.** *The Journal of allergy and clinical immunology*
Cepika, A., Sato, Y., Liu, J. M., Uyeda, M. J., Bacchetta, R., Roncarolo, M. G.
2018; 142 (6): 1679–95
- **A multidimensional blood stimulation assay reveals immune alterations underlying systemic juvenile idiopathic arthritis** *JOURNAL OF EXPERIMENTAL MEDICINE*
Cepika, A., Banchereau, R., Segura, E., Ohouo, M., Cantarel, B., Goller, K., Cantrell, V., Ruchaud, E., Gatewood, E., Phuong Nguyen, Gu, J., Anguiano, E., Zurawski, S., et al
2017; 214 (11): 3449–66
- **Understanding Human Autoimmunity and Autoinflammation Through Transcriptomics** *ANNUAL REVIEW OF IMMUNOLOGY, VOL 35*
Banchereau, R., Cepika, A., Banchereau, J., Pascual, V., Littman, D. R., Yokoyama, W. M.
2017; 35: 337–70

- **Unraveling Transcriptomic Profiles of Pediatric Acute Myeloid Leukemia Cells Sensitive or Resistant to Cytotoxic Killing by Engineered TR1-like Cells**
Sayitoglu, E., Luca, B., Thomas, B., Cieniewicz, B., Uyeda, M., Chen, P., Cepika, A., Gentles, A., Roncarolo, M.
CELL PRESS.2022: 153
- **Downregulation of SATB1 by miRNAs Reduces Megakaryocyte/Erythroid Progenitor Expansion in pre-clinical models of Diamond Blackfan Anemia** *Experimental Hematology*
Wilkes, M. C., Scanlon, V., Shibuya, A., Cepika, A., Eskin, A., Chen, Z., Narla, A., Glader, B., Roncarolo, M., Nelson, S. F., Sakamoto, K. M.
2022
- **296 - Phase 1/1b Study of T-allo10 Infusion after HLA-Partially Matched ## depleted-HSCT in Children and Young Adults with Hematologic Malignancies: Preliminary Results** *2022 Tandem Meetings of ASTCT and CIBMTR*
Bertaina, A., Bacchetta, R., Shyr, D. C., Saini, G., Kristovich, K., Agarwal, R., Klein, O., Melsop, K., Tate, K., Barbarito, G., Chen, P., Cepika, A., Roncarolo, et al
2022: S232
- **Adoptively Transferred, In Vitro-Generated Alloantigen-Specific Type 1 Regulatory T (Tr1) Cells Persist Long-Term In Vivo**
Cepika, A., Chen, P. P., Agarwal, R., Saini, G., Louis, D. M., Amaya-Hernandez, L. C., Xu, L., Shiraz, P., Tate, K. M., Margittai, D., Bhatia, N., Meyer, E., Bertaina, et al
CELL PRESS.2021: 73
- **Engineered Type 1 Regulatory T Cells Have a Cytotoxic Profile and Kill Pediatric Acute Myeloid Leukemia Cells**
Sayitoglu, E., Uyeda, M., Liu, J. M., Cieniewicz, B., Chen, P., Lacayo, N., Cepika, A., Roncarolo, M.
CELL PRESS.2021: 317
- **A case of Spondyloenchondrodysplasia with immune dysregulation presenting as Systemic Lupus Erythematosus**
Camacho, J., Singh, D., Bacchetta, R., Weinberg, K., Cepika, A., Narula, M., Lewis, D. B., Gernez, Y., Weinacht, K.
SPRINGER/PLENUM PUBLISHERS.2021: S18–S19
- **BHLHE40 Regulates IL-10 and IFN- γ Production in T Cells but Does Not Interfere With Human Type 1 Regulatory T Cell Differentiation** *Frontiers in Immunology*
Uyeda, M. J., Freeborn, R. A., Cieniewicz, B., Romano, R., Chen, P. P., Liu, J. M., Thomas, B., Lee, E., Cepika, A., Bacchetta, R., Roncarolo, M.
2021
- **Pre-clinical development and molecular characterization of an engineered type 1 regulatory T-cell product suitable for immunotherapy.** *Cytotherapy*
Liu, J. M., Chen, P., Uyeda, M. J., Cieniewicz, B., Sayitoglu, E. C., Thomas, B. C., Sato, Y., Bacchetta, R., Cepika, A. M., Roncarolo, M. G.
2021
- **Engineered Type-1 Regulatory T Cells as Cellular Therapy for Treatment of Immune Mediated Diseases**
Liu, J. M., Chen, P., Cieniewicz, B., Cepika, A., Bacchetta, R., Roncarolo, M.
AMER ASSOC IMMUNOLOGISTS.2020
- **Alloantigen-specific Tr1 cells designed to prevent GvHD have a distinct molecular identity and suppress through CTLA-4 and PD-1** *Society for Immunotherapy of Cancer's (SITC) 35th Anniversary Annual Meeting*
Cepika, A., Chen, P. P., Uyeda, M. J., Cieniewicz, B., Narula, M., Amaya, L., Louis, D. M., Xu, L., Ji, X., Bertaina, A., Agarwal-Hashmi, R., Davis, M. M., Meyer, et al
2020: A159–A159
- **Longitudinal profiling of human blood transcriptome in healthy and lupus pregnancy** *JOURNAL OF EXPERIMENTAL MEDICINE*
Hong, S., Banchereau, R., Maslow, B. L., Guerra, M. M., Cardenas, J., Baisch, J., Branch, D., Porter, T., Sawitzke, A., Laskin, C. A., Buyon, J. P., Merrill, J., Sammaritano, et al
2019; 216 (5): 1154–69
- **Engineered Type-1 Regulatory T Cells for Treatment of Graft-versus-Host Disease in Allogeneic Hematopoietic Stem Cell Transplant Recipients**
Liu, J. H., Chen, P., Cieniewicz, B., Cepika, A., Bacchetta, R., Roncarolo, M.
CELL PRESS.2019: 459
- **IL1 Receptor Antagonist Controls Transcriptional Signature of Inflammation in Patients with Metastatic Breast Cancer** *CANCER RESEARCH*
Wu, T., Xu, K., Martinek, J., Young, R. R., Banchereau, R., George, J., Turner, J., Kim, K., Zurawski, S., Wang, X., Blankenship, D., Brookes, H. M., Marches, et al
2018; 78 (18): 5243–58
- **Timing of Influenza Vaccine Response in Patients That Receive Autologous Hematopoietic Cell Transplantation**

- Sokol, K. A., Kim-Schulze, S., Robins, H., Obermoser, G., Blankenship, D., Qi, J., Patel, M., Kakon, N., Ueno, H., Anguiano, E., Priest, E., Cepika, A., Emerson, et al
2017; S143–S144
- **Personalized Immunomonitoring Uncovers Molecular Networks that Stratify Lupus Patients** *CELL*
Banchereau, R., Hong, S., Cantarel, B., Baldwin, N., Baisch, J., Edens, M., Cepika, A., Acs, P., Turner, J., Anguiano, E., Vinod, P., Kahn, S., Obermoser, et al
2016; 165 (3): 551–65
 - **Transcriptional specialization of human dendritic cell subsets in response to microbial vaccines** *NATURE COMMUNICATIONS*
Banchereau, R., Baldwin, N., Cepika, A., Athale, S., Xue, Y., Yu, C. I., Metang, P., Cheruku, A., Berthier, I., Gayet, I., Wang, Y., Ohouo, M., Snipes, et al
2014; 5: 5283
 - **RNA recognition by human TLR8 can lead to autoimmune inflammation** *JOURNAL OF EXPERIMENTAL MEDICINE*
Guiducci, C., Gong, M., Cepika, A., Xu, Z., Tripodo, C., Bennett, L., Crain, C., Quartier, P., Cush, J. J., Pascual, V., Coffman, R. L., Barrat, F. J.
2013; 210 (13): 2903–19
 - **Systems approaches to human autoimmune diseases** *CURRENT OPINION IN IMMUNOLOGY*
Banchereau, R., Cepika, A., Pascual, V.
2013; 25 (5): 598–605
 - **Systems Scale Interactive Exploration Reveals Quantitative and Qualitative Differences in Response to Influenza and Pneumococcal Vaccines** *IMMUNITY*
Obermoser, G., Presnell, S., Domico, K., Xu, H., Wang, Y., Anguiano, E., Thompson-Snipes, L., Ranganathan, R., Zeitner, B., Bjork, A., Anderson, D., Speake, C., Ruchaud, et al
2013; 38 (4): 831–44
 - **Immunodeficiency, autoinflammation and amylopectinosis in humans with inherited HOIL-1 and LUBAC deficiency** *NATURE IMMUNOLOGY*
Boisson, B., Laplantine, E., Prando, C., Giliani, S., Israelsson, E., Xu, Z., Abhyankar, A., Israel, L., Trevejo-Nunez, G., Bogunovic, D., Cepika, A., MacDuff, D., Chrabieh, et al
2012; 13 (12): 1178–+
 - **Decrease in circulating DNA, IL-10 and BAFF levels in newly-diagnosed SLE patients after corticosteroid and chloroquine treatment** *CELLULAR IMMUNOLOGY*
Cepika, A., Juresa, D., Vergles, J., Malenica, B., Santak, M., Kapitanovic, S., Mayer, M., Anic, B., Sentic, M., Gagro, A.
2012; 276 (1-2): 196–203
 - **Monocyte Response to LPS after Exposure to Corticosteroids and Chloroquine with Implications for Systemic Lupus Erythematosus** *SCANDINAVIAN JOURNAL OF IMMUNOLOGY*
Cepika, A., Bendelja, K., Vergles, J. M., Malenica, B., Kapitanovic, S., Gagro, A.
2010; 72 (5): 434–43
 - **Expression of chemokine receptor CX(3)CR1 in infants with respiratory syncytial virus bronchiolitis** *PEDIATRIC ALLERGY AND IMMUNOLOGY*
Cepika, A., Gagro, A., Bace, A., Tjesic-Drinkovic, D., Kelecic, J., Baricic-Voskresensky, T., Matic, M., Drazenovic, V., Marinic, I., Mlinaric-Galinovic, G., Tjesic-Drinkovic, D., Vrtar, Z., Rabatic, et al
2008; 19 (2): 148–56
 - **The effect of chloroquine add-on therapy on TLR9 expression in systemic lupus erythematosus**
Cepika, A., Soldo-Juresa, D., Morovic-Vergles, J., Malenica, B., Gagro, A.
ACADEMIC PRESS INC ELSEVIER SCIENCE.2008: S93–S94
 - **Effect of steroids on the frequency of regulatory T Cells and expression of FOXP3 in a patient with systemic lupus erythematosus: a two-year follow-up** *LUPUS*
Cepika, A., Marinic, I., Morovic-Vergles, J., Soldo-Juresa, D., Gagro, A.
2007; 16 (5): 374–77
 - **Determination of intracellular protein expression** *Methods in Molecular Biology*
Cepika, A., Gagro, A.
Rudjer Boškovi# Institute.2007: 798–803
 - **ELISPOT** *Methods in Molecular Biology*
Cepika, A., Gagro, A.
Rudjer Boškovi# Institute.2007: 696–702

- **Determination of cytokines by flow cytometry** *Methods in Molecular Biology*
Cepika, A., Gagro, A.
Rudjer Boškovi# Institute.2007: 694–696
- **Type I cytokine profiles of human naive and memory B lymphocytes: a potential for memory cells to impact polarization** *IMMUNOLOGY*
Gagro, A., Servis, D., Cepika, A. M., Toellner, K. M., Grafton, G., Taylor, D. R., Branica, S., Gordon, J.
2006; 118 (1): 66–77
- **The role of immune system in control of the influenza pandemic** *Infektološki glasnik*
Gagro, A., Cepika, A., Kosor, E., Marini#, I., Kuzman, I., Jeren, T., Draženovi#, V., Rakuši#, S., Mlinari#-Galinovi#, G.
2006; 26 (1): 13-18