



Yael Gernez

Clinical Associate Professor, Pediatrics - Immunology and Allergy

 NIH Biosketch available Online

CLINICAL OFFICES

- **Division of Allergy and Immunology**

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Bio

BIO

My clinic focuses on solving the molecular puzzles that underlie rare allergic and immunologic diseases to shed light on fundamental principles governing allergy, inflammation and immune system defects. My goal is to find better and safer therapies for my patients with rare diseases that include autoinflammation, autoimmunity and primary immune deficiency. It is important to highlight that every patient requires individualized therapeutic approaches based on their underlying genetic problem and the types and severity of their clinical manifestations. For some patients, a hematopoietic stem cell transplant (HSCT) is curative while for others, a targeted drug therapy, such as a biologic or small molecule agent, is most suitable. In some cases, a truly novel therapy may be required, e.g., anti-sense oligonucleotide therapy to suppress aberrant gene splicing or adoptive cellular therapy. My passion is to provide the best personalized therapy for our patients with allergy and immunology diseases. This often requires performing very specialized functional assays and in some cases in enlisting laboratories with specific expertise or interest in particular genetic disorders.

CLINICAL FOCUS

- Allergy and Immunology
- Primary immunodeficiency in adults and children
- Dysregulation
- CVID
- Food allergy

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Pediatrics - Immunology and Allergy
- Member, Maternal & Child Health Research Institute (MCHRI)

ADMINISTRATIVE APPOINTMENTS

- Post Doctoral Fellow in Genetics, Herzenberg Laboratory, Stanford School Of Medicine, (2008-2012)
- Resident in Internal Medicine, Highland Alameda County Hospital, Oakland, CA, (2012-2015)
- Clinical Fellow in Allergy and Immunology, Icahn School of Medicine, Mount Sinai Hospital, New York, (2015-2017)

HONORS AND AWARDS

- Dean Fellowship, Stanford University, School of Medicine (2008)
- Child Health Research Program Fellowship, Packard Foundation, Stanford Medical Center (2008)
- McCormick Award, Stanford University School of Medicine (2009-2010)
- SPARK/SPECTRUM Award (under the mentorship of Dr. Kari Nadeau), Stanford School of Medicine (2010)
- Elizabeth Nash Memorial Fellowship, Cystic Fibrosis Research Inc. (2011-2012)
- AAAAI Interest Section Fellow in Training Award, AAAAI (2012)
- Award for poster presentation in the Research category, ACP regional Meeting (2013)
- Observer at the PID Summer School, CIS, PID summer school (2017)
- AAAAI/Elliott and Roslyn Jaffe Third-Year Fellowship Food Allergy Research Award, Icahn School of Medicine at Mount Sinai, New York (2017)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, EGID (2018 - present)
- Member, ACAAI (2014 - present)
- Member, CIS (2014 - present)
- Member, AAAAI (2014 - present)

PROFESSIONAL EDUCATION

- Residency: Alameda Health System Highland Hospital (2015) CA
- Fellowship: Icahn School of Medicine at Mount Sinai Allergy and Immunology Fellowship (2017) NY
- PhD Training: Marseille School of Medicine (2011) France
- Board Certification: Allergy and Immunology, American Board of Allergy and Immunology (2017)
- Board Certification: Internal Medicine, American Board of Internal Medicine (2015)
- Fellowship: Stanford University (2012) CA
- Fellowship: Stanford University Allergy and Immunology Fellowship (2012) CA
- Medical Education: Marseille School of Medicine (2008) France
- PhD, Marseille School of Medicine , French Ph.D. with best Honors, Infectious Disease, Marseille University (2011)
- MD, Marseille School of Medicine, France , State Diploma of Internal Medicine and Diploma of Specialized Studies in Adult Pulmonary Medicine (2011)

PATENTS

- Yael Gernez, Tirouvanziam R, Nadeau KN, and Herzenberg LA. "United States Patent ASB-004 Methods and assays for detecting and quantifying pure subpopulation of white blood cells in immune system disorders", Stanford University Office of Technology Transfer, Stanford, CA, Jul 1, 2011

Publications

PUBLICATIONS

- **CTLA4 haploinsufficiency presenting as celiac-like disease and treatment considerations in the setting of previous disseminated coccidioidomycosis**
Salgado, C., Uzel, G., Goyal, A., Khavari, N., Gernez, Y.
SPRINGER/PLENUM PUBLISHERS.2022: S38-S39
- **Immunogenicity of a Third COVID-19 mRNA Vaccine Dose in PID Patients with Functional B-cell Defects.** *The journal of allergy and clinical immunology. In practice*
Gernez, Y., Murugesan, K., Cortales, C. R., Banaei, N., Hoyte, L., Pinsky, B. A., Lewis, D. B., Pham, M.
2022

- **Immunogenicity and Tolerability of COVID-19 mRNA Vaccines in PID patients with functional B-cell defects.** *The Journal of allergy and clinical immunology*
Pham, M. N., Murugesan, K., Banaei, N., Pinsky, B. A., Tang, M., Hoyte, E., Lewis, D. B., Gernez, Y.
1800
- **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
- **A challenging case of recurrent idiopathic hemophagocytic lymphohistiocytosis (HLH) initially presenting in an infant with Pneumocystis jirovecii pneumonia**
Solomon, B., Balagtas, J., Chien, M., Pooni, R., Balboni, I., Weinacht, K., Gernez, Y.
SPRINGER/PLENUM PUBLISHERS.2021: S55
- **Masquerader of Lip Angioedema After Lip Injection.** *The journal of allergy and clinical immunology. In practice*
Hsu, C., Requena, L., LeBoit, P. E., Gernez, Y.
2021
- **Dupilumab use in recalcitrant allergic fungal rhinosinusitis** *ANNALS OF ALLERGY ASTHMA & IMMUNOLOGY*
Lo, R. M., Liu, A. Y., Valdez, T. A., Gernez, Y.
2020; 125 (5): 617–19
- **Insight into the Pediatric and Adult Dichotomy of COVID-19: Age-Related Differences in the Immune Response to SARS-CoV-2 infection.** *Pediatric pulmonology*
Fialkowski, A., Gernez, Y., Arya, P., Weinacht, K. G., Bernard Kinane, T., Yonker, L. M.
2020
- **Dupilumab use in recalcitrant allergic fungal rhinosinusitis.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*
Lo, R. M., Liu, A. Y., Valdez, T. A., Gernez, Y.
2020
- **A Case Of Disseminated Cryptococcosis Gattii Due To Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) Autoantibodies**
Lee, I., Anjum, S., Liu, A., Williamson, P., Holland, S., Gernez, Y.
SPRINGER/PLENUM PUBLISHERS.2020: S77–S78
- **A Case of G6PC3 Congenital Neutropenia, Misdiagnosed As Evans Syndrome**
Camacho, J., Brar, R., Chapman, C., Fernandez-Pol, S., Weinacht, K., Gernez, Y.
SPRINGER/PLENUM PUBLISHERS.2020: S131–S132
- **Disseminated Pneumocystis jirovecii Infection with Osteomyelitis in a Patient with CTLA-4 Haploinsufficiency.** *Journal of clinical immunology*
Siddiqi, A. E., Liu, A. Y., Charville, G. W., Kunder, C. A., Uzel, G. n., Sadighi Akha, A. A., Oak, J. n., Martin, B. n., Sacha, J. n., Lewis, D. B., Gernez, Y. n.
2020
- **Masqueraders of Angioedema after a Dental Procedure.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*
Lee, I. T., Arioka, M. n., Kleinman, S. H., Gernez, Y. n.
2020
- **Severe autoinflammation in four patients with C-terminal variants in CDC42 successfully treated with IL-1beta inhibition.** *The Journal of allergy and clinical immunology*
Gernez, Y., de Jesus, A. A., Alsaleem, H., Macaubas, C., Roy, A., Lovell, D., Jagadeesh, K. A., Alehashemi, S., Erdman, L., Grimley, M., Talarico, S., Bacchetta, R., Lewis, et al
2019
- **Autoimmune Lymphoproliferative Syndrome with Histopathologic Features of Castleman Disease**
Lo, R., Gratzinger, D., Keiser, E., Chang, K., Gernez-Goldhammer, Y.
SPRINGER/PLENUM PUBLISHERS.2019: S103–S104
- **Novel CDC42 Mutation Causes Severe Autoinflammatory Syndrome Responsive to IL-1 Inhibition**
Gernez, Y., Kirbey, M., Balagas, J. M., Macaubas, C. I., Canna, S., Lewis, D. B., Mellins, E., Bacchetta, R., Weinacht, K. G.

SPRINGER/PLENUM PUBLISHERS.2019: S69

- **Unexpected Diagnosis in a Family with Autoimmune Multilineage Cytopenia and Hypogammaglobulinemia**
Gernez, Y., Chavez, J., Bussel, J., Cunningham-Rundles, C.
SPRINGER/PLENUM PUBLISHERS.2019: S1–S2
- **Epigenetic Immune Cell Quantification for Diagnosis and Monitoring of Patients with Primary Immune Deficiencies and Immune Regulatory Disorders**
Schulze, J., Werner, J., Schildknecht, K., Lakshmanan, U., Gruetzkau, A., Chu, J., Gernez, Y., Speckmann, C., Weinacht, K. G., Bertaina, A., Baron, U., Borte, S., Olek, et al
SPRINGER/PLENUM PUBLISHERS.2019: S30
- **A Case of Disseminated Pneumocystis Jiroveci in a Non-Human Immunodeficiency Virus Infected Patient**
Siddiqi, A. E., Sacha, J., Saenz, R., Liu, A., Kunder, C., Uzel, G., Martin, B., Lewis, D. B., Gernez-Goldhammer, Y.
SPRINGER/PLENUM PUBLISHERS.2019: S73–S74
- **Resistin is elevated in cystic fibrosis sputum and correlates negatively with lung function** *JOURNAL OF CYSTIC FIBROSIS*
Forrest, O. A., Chopyk, D. M., Gernez, Y., Brown, M. R., Conrad, C. K., Moss, R. B., Tangpricha, V., Peng, L., Tirouvanziam, R.
2019; 18 (1): 64–70
- **Is pulmonary arterial hypertension a risk post-splenectomy in common variable immunodeficiency?**
Gernez, Y., Pham, M. N., Ho, H., Cunningham-Rundles, C.
SPRINGER/PLENUM PUBLISHERS.2018: 379
- **Vedolizumab for autoimmune enteropathy in primary immunodeficiency: a case series of outcomes**
Sifers, T., Maglione, P., Baker, M., Tsuang, A., Gernez, Y., Pham, M. N., Feuille, E., Hirten, R., Colombel, J., Cunningham-Rundles, C.
SPRINGER/PLENUM PUBLISHERS.2018: 431
- **Variability in diagnosis and management of acquired cold-induced urticaria.** *The journal of allergy and clinical immunology. In practice*
Gernez, Y. n., Sicherer, S. H., Wang, J. n.
2018
- **Humoral immunodeficiencies: conferred risk of infections and benefits of immunoglobulin replacement therapy.** *Transfusion*
Gernez, Y. n., Baker, M. G., Maglione, P. J.
2018; 58 Suppl 3: 3056–64
- **Resistin is elevated in cystic fibrosis sputum and correlates negatively with lung function.** *Journal of cystic fibrosis : official journal of the European Cystic Fibrosis Society*
Forrest, O. A., Chopyk, D. M., Gernez, Y. n., Brown, M. R., Conrad, C. K., Moss, R. B., Tangpricha, V. n., Peng, L. n., Tirouvanziam, R. n.
2018
- **Clinical and biological response to rituximab treatment in 3 patients with acquired C1-inhibitor deficiency.** *Annals of allergy, asthma & immunology : official publication of the American College of Allergy, Asthma, & Immunology*
Busse, P. J., Gernez, Y.
2017; 119 (4): 380-382
- **Autosomal Dominant Hyper-IgE Syndrome in the USIDNET Registry.** *The journal of allergy and clinical immunology. In practice*
Gernez, Y., Freeman, A. F., Holland, S. M., Garabedian, E., Patel, N. C., Puck, J. M., Sullivan, K. E., Akhter, J., Secord, E., Chen, K., Buckley, R., Haddad, E., Ochs, et al
2017
- **Immunotherapy for Food Allergy: Are We There Yet?** *journal of allergy and clinical immunology. In practice*
Gernez, Y., Nowak-Wegrzyn, A.
2017; 5 (2): 250-272
- **Hemoptysis in a Patient with Elevated Immunoglobulin E** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY-IN PRACTICE*
Gernez, Y., Tsuang, A., Smith, T. D., Shahjehan, K., Hui, Y., Maglione, P. J., Cunningham-Rundles, C.
2016; 4 (6): 1054-1058
- **Basophil activation test determination of CD63 combined with CD203c is not superior to CD203c alone in identifying allergic bronchopulmonary aspergillosis in cystic fibrosis.** *The Journal of allergy and clinical immunology*
Gernez, Y., Waters, J., Tirouvanziam, R., Herzenberg, L., Moss, R.

2016; 138 (4): 1195-1196

- **The basophil surface marker CD203c identifies Aspergillus species sensitization in patients with cystic fibrosis** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY*
Mirkovic, B., Lavelle, G. M., Azim, A. A., Helma, K., Gargoum, F. S., Molloy, K., Gernez, Y., Dunne, K., Renwick, J., Murphy, P., Moss, R. B., Greene, C. M., Gunaratnam, et al
2016; 137 (2): 436-?
- **Modulatory Effects of Aspergillus Colonization and Abpa on Blood and Sputum Granulocytes in CF**
Gernez, Y., Waters, J., Dunn, C. E., Davies, Z., Everson, C., Tirouvanziam, R., Herzenberg, L., Moss, R. B.
MOSBY-ELSEVIER.2016: AB29
- **Earth Mover's Distance (EMD): A True Metric for Comparing Biomarker Expression Levels in Cell Populations.** *PloS one*
Orlova, D. Y., Zimmerman, N., Meehan, S., Meehan, C., Waters, J., Ghosn, E. E., Filatenkov, A., Kolyagin, G. A., Gernez, Y., Tsuda, S., Moore, W., Moss, R. B., Herzenberg, et al
2016; 11 (3)
- **Basophil activation test determination of CD63 combined with CD203c is not superior to CD203c alone in identifying ABPA in cystic fibrosis** *Journal of Allergy and Clinical Immunology*
Gernez, Y., Waters, J., Tirouvanziam, R., Herzenberg, L. A., Moss, R. B.
2016: 1195-96
- **Blood basophil activation is a reliable biomarker of allergic bronchopulmonary aspergillosis in cystic fibrosis** *EUROPEAN RESPIRATORY JOURNAL*
Gernez, Y., Walters, J., Mirkovic, B., Lavelle, G. M., Colleen, D. E., Davies, Z. A., Everson, C., Tirouvanziam, R., Silver, E., Wallenstein, S., Chotirmall, S. H., McElvaney, N. G., Herzenberg, et al
2016; 47 (1): 177-185
- **Blood basophil activation is a reliable biomarker of allergic bronchopulmonary aspergillosis in cystic fibrosis.** *The European respiratory journal*
Gernez, Y., Walters, J., Mirkovi#, B., Lavelle, G. M., Colleen, D. E., Davies, Z. A., Everson, C., Tirouvanziam, R., Silver, E., Wallenstein, S., Chotirmall, S. H., McElvaney, N. G., Herzenberg, et al
2015
- **The basophil surface marker CD203c identifies Aspergillus species sensitization in patients with cystic fibrosis.** *The Journal of allergy and clinical immunology*
Mirkovi#, B., Lavelle, G. M., Azim, A. A., Helma, K., Gargoum, F. S., Molloy, K., Gernez, Y., Dunne, K., Renwick, J., Murphy, P., Moss, R. B., Greene, C. M., Gunaratnam, et al
2015
- **Basophil Activation Is a Reliable Biomarker Of Allergic Bronchopulmonary Aspergillosis (ABPA) In CF: One Year Results Of a Longitudinal Cohort Study**
Gernez, Y., Waters, J., Dunn, C., Davies, Z., Tirouvanziam, R., Everson, C., Tamaresis, J., Herzenberg, L., Moss, R. B.
MOSBY-ELSEVIER.2014: AB58
- **Blood basophils from cystic fibrosis patients with allergic bronchopulmonary aspergillosis are primed and hyper-responsive to stimulation by aspergillus allergens** *JOURNAL OF CYSTIC FIBROSIS*
Gernez, Y., Dunn, C. E., Everson, C., Mitsunaga, E., Gudiputi, L., Krasinska, K., Davies, Z. A., Herzenberg, L. A., Tirouvanziam, R., Moss, R. B.
2012; 11 (6): 502-510
- **Modulation of mTOR Effector Phosphoproteins in Blood Basophils from Allergic Patients** *JOURNAL OF CLINICAL IMMUNOLOGY*
Gernez, Y., Tirouvanziam, R., Reshamwala, N., Yu, G., Weldon, B. C., Galli, S. J., Herzenberg, L. A., Nadeau, K. C.
2012; 32 (3): 565-573
- **Immunophenotyping of Peripheral Eosinophils Demonstrates Activation in Eosinophilic Esophagitis** *JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION*
Tammie Nguyen, T., Gernez, Y., Fuentesbella, J., Patel, A., Tirouvanziam, R., Reshamwala, N., Bass, D., Berquist, W. E., Cox, K. L., Kerner, J. A., Nadeau, K. C.
2011; 53 (1): 40-47
- **Basophil CD203c Levels Are Increased at Baseline and Can Be Used to Monitor Omalizumab Treatment in Subjects with Nut Allergy** *INTERNATIONAL ARCHIVES OF ALLERGY AND IMMUNOLOGY*
Gernez, Y., Tirouvanziam, R., Yu, G., Ghosn, E. E., Reshamwala, N., Tammie Nguyen, T., Tsai, M., Galli, S. J., Herzenberg, L. A., Herzenberg, L. A., Nadeau, K. C.
2011; 154 (4): 318-327

- **Increased HLA-DR Expression on Tissue Eosinophils in Eosinophilic Esophagitis** *JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION*
Patel, A. J., Fuentebella, J., Gernez, Y., Nguyen, T., Bass, D., Berquist, W., Cox, K., Sibley, E., Kerner, J., Nadeau, K.
2010; 51 (3): 290-294
- **Activation of critical, host-induced, metabolic and stress pathways marks neutrophil entry into cystic fibrosis lungs** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Makam, M., Diaz, D., Laval, J., Gernez, Y., Conrad, C. K., Dunn, C. E., Davies, Z. A., Moss, R. B., Herzenberg, L. A., Herzenberg, L. A., Tirouvanziam, R.
2009; 106 (14): 5779-5783
- **Enhanced Expression of CD66b on Peripheral Blood Granulocytes in Eosinophilic Esophagitis**
Nguyen, T., Gernez, Y., Fuentebella, J., Patel, A., Herzenberg, L., Tirouvanziam, R., Nadeau, K.
ACADEMIC PRESS INC ELSEVIER SCIENCE.2009: S120-S121
- **A rare cause of stridor in a 59 year old woman in intensive care** *REVUE DES MALADIES RESPIRATOIRES*
Gernez, Y., Breen, D., Peloni, J., Meric, B., Dutau, H.
2008; 25 (7): 871-874
- **Profound functional and signaling changes in viable inflammatory neutrophils homing to cystic fibrosis airways** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Tirouvanziam, R., Gernez, Y., Conrad, C. K., Moss, R. B., Schrijver, I., Dunn, C. E., Davies, Z. A., Herzenberg, L. A., Herzenberg, L. A.
2008; 105 (11): 4335-4339
- **Altered phosphorylated signal transducer and activator of transcription profile of CD4(+)CD161(+) T cells in asthma: Modulation by allergic status and oral corticosteroids** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY*
Gernez, Y., Tirouvanziam, R., Nguyen, K. D., Herzenberg, L. A., Krensky, A. M., Nadeau, K. C.
2007; 120 (6): 1441-1448
- **Phospho-FACS: a powerful tool for exploring intracellular transduction cascades** *REVUE DES MALADIES RESPIRATOIRES*
Gernez, Y., Herzenberg, L. A., Herzenberg, L. A., Tirouvanziam, R.
2007; 24 (8): 955-964
- **A contributive result of open-lung biopsy improves survival in acute respiratory distress syndrome patients** *CRITICAL CARE MEDICINE*
Papazian, L., Doddoli, C., Chetaille, B., Gernez, Y., Thirion, X., Roch, A., Donati, Y., Bonnety, M., Zandotti, C., Thomas, P.
2007; 35 (3): 755-762
- **Hypersensitivity to carboplatin - An effect of generic drugs?** *REVUE DES MALADIES RESPIRATOIRES*
Gernez, Y., Barlesi, F., Astoul, R., Magnan, A.
2006; 23 (3): 269-272
- **Acute respiratory distress syndrome following inhalation of barium sulphate** *REVUE DES MALADIES RESPIRATOIRES*
Gernez, Y., Barlesi, F., Doddoli, C., Chetaille, B., Forel, J. M., Astoul, P., Papazian, L.
2005; 22 (3): 477-480

PRESENTATIONS

- Clinical response to Rituximab in three patients with acquired C1-INH deficiency - ACAAI (1/11/2016)