

Stanford



Eric Meffre

Professor of Medicine (Immunology and Rheumatology)

Medicine - Immunology & Rheumatology

Bio

ACADEMIC APPOINTMENTS

- Professor, Medicine - Immunology & Rheumatology
- Member, Maternal & Child Health Research Institute (MCHRI)

Teaching

COURSES

2023-24

- Advanced Immunology II: IMMUNOL 202 (Spr)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Farhana Rahman, Aiswarya Sethumadhavan

Publications

PUBLICATIONS

- **FOXP3 deficiency, from the mechanisms of the disease to curative strategies.** *Immunological reviews*
Borna, S., Meffre, E., Bacchetta, R.
2023
- **TLR9 ligand sequestration by chemokine CXCL4 negatively affects central B cell tolerance** *JOURNAL OF EXPERIMENTAL MEDICINE*
Cakan, E., Kioon, M., Garcia-Carmona, Y., Glauzy, S., Oliver, D., Yamakawa, N., Loza, A., Du, Y., Schickel, J., Boeckers, J. M., Yang, C., Baldo, A., Ivashkiv, et al
2023; 220 (12)
- **Isoform-specific knockdown of long and intermediate prolactin receptors interferes with evolution of B-cell neoplasms.** *Communications biology*
Taghi Khani, A., Kumar, A., Sanchez Ortiz, A., Radecki, K. C., Aramburo, S., Lee, S. J., Hu, Z., Damirchi, B., Lorenson, M. Y., Wu, X., Gu, Z., Stohl, W., Sanz, et al
2023; 6 (1): 295
- **Autoantibodies are highly prevalent in non-SARS-CoV-2 respiratory infections and critical illness.** *JCI insight*
Feng, A., Yang, E. Y., Moore, A. R., Dhingra, S., Chang, S. E., Yin, X., Pi, R., Mack, E. K., Völkel, S., Geßner, R., Gündisch, M., Neubauer, A., Renz, et al
2023; 8 (3)
- **Partial RAG deficiency in humans induces dysregulated peripheral lymphocyte development and humoral tolerance defect with accumulation of T-bet+ B cells.** *Nature immunology*
Csomos, K., Ujhazi, B., Blazso, P., Herrera, J. L., Tipton, C. M., Kawai, T., Gordon, S., Ellison, M., Wu, K., Stowell, M., Haynes, L., Cruz, R., Zakota, et al

2022

● **Inflammasome activation in infected macrophages drives COVID-19 pathology.** *Nature*

Sefik, E., Qu, R., Junqueira, C., Kaffe, E., Mirza, H., Zhao, J., Brewer, J. R., Han, A., Steach, H. R., Israelow, B., Blackburn, H. N., Velazquez, S. E., Chen, et al 2022; 606 (7914): 585-593

● **A humanized mouse model of chronic COVID-19.** *Nature biotechnology*

Sefik, E., Israelow, B., Mirza, H., Zhao, J., Qu, R., Kaffe, E., Song, E., Halene, S., Meffre, E., Kluger, Y., Nussenzweig, M., Wilen, C. B., Iwasaki, et al 2022; 40 (6): 906-920

● **A Novel AICDA Splice-Site Mutation in Two Siblings with HIGM2 Permits Somatic Hypermutation but Abrogates Mutational Targeting.** *Journal of clinical immunology*

Dirks, J., Haase, G., Cantaert, T., Frey, L., Klaas, M., Rickert, C. H., Girschick, H., Meffre, E., Morbach, H. 2022; 42 (4): 771-782

● **Loss of Treg identity in IPEX patients is associated with increase autoreactivity in Teff cells**

Borna, S., Lee, E., Lakshmanan, U., Narula, M., Schulze, J., Ramachandran, A., Bertaina, A., Meffre, E., Maria, R., Bacchetta, R. SPRINGER/PLENUM PUBLISHERS.2022: S78-S79

● **High-throughput identification of autoantibodies that target the human exoproteome.** *Cell reports methods*

Wang, E. Y., Dai, Y., Rosen, C. E., Schmitt, M. M., Dong, M. X., Ferré, E. M., Liu, F., Yang, Y., González-Hernández, J. A., Meffre, E., Hinchcliff, M., Koumpouras, F., Lionakis, et al 2022; 2 (2)

● **Defective Early B Cell Tolerance Checkpoints in Patients With Systemic Sclerosis Allow the Production of Self Antigen-Specific Clones.** *Arthritis & rheumatology (Hoboken, N.J.)*

Glauzy, S., Olson, B., May, C. K., Parisi, D., Massad, C., Hansen, J. E., Ryu, C., Herzog, E. L., Meffre, E. 2022; 74 (2): 307-317

● **Autoantibodies targeting cytokines and connective tissue disease autoantigens are common in acute non-SARS-CoV-2 infections.** *Research square*

Feng, A., Yang, E., Moore, A., Dhingra, S., Chang, S., Yin, X., Pi, R., Mack, E., Völkel, S., Geßner, R., Gundisch, M., Neubauer, A., Renz, et al 2022

● **Positive and negative selection shape the human naïve B cell repertoire.** *The Journal of clinical investigation*

Chen, J. W., Schickel, J. N., Tsakiris, N., Sng, J., Arbogast, F., Bouis, D., Parisi, D., Gera, R., Boeckers, J. M., Delmotte, F. R., Veselits, M., Schuetz, C., Jacobsen, et al 2022; 132 (2)

● **Developmental partitioning of SYK and ZAP70 prevents autoimmunity and cancer.** *Molecular cell*

Sadras, T., Martin, M., Kume, K., Robinson, M. E., Saravanakumar, S., Lenz, G., Chen, Z., Song, J. Y., Siddiqi, T., Oksa, L., Knapp, A. M., Cutler, J., Cosgun, et al 2021; 81 (10): 2094-2111.e9

● **Disease-associated CTNNBL1 mutation impairs somatic hypermutation by decreasing nuclear AID.** *The Journal of clinical investigation*

Kuhny, M., Forbes, L. R., Çakan, E., Vega-Loza, A., Kostiuk, V., Dinesh, R. K., Glauzy, S., Stray-Pedersen, A., Pezzi, A. E., Hanson, I. C., Vargas-Hernandez, A., Xu, M. L., Coban-Akdemir, et al 2020; 130 (8): 4411-4422

● **Autoreactivity in naïve human fetal B cells is associated with commensal bacteria recognition.** *Science (New York, N.Y.)*

Chen, J. W., Rice, T. A., Bannock, J. M., Bielecka, A. A., Strauss, J. D., Catanzaro, J. R., Wang, H., Menard, L. C., Anolik, J. H., Palm, N. W., Meffre, E. 2020; 369 (6501): 320-325

● **Impaired ATM activation in B cells is associated with bone resorption in rheumatoid arthritis.** *Science translational medicine*

Mensah, K. A., Chen, J. W., Schickel, J. N., Isnardi, I., Yamakawa, N., Vega-Loza, A., Anolik, J. H., Gatti, R. A., Gelfand, E. W., Montgomery, R. R., Horowitz, M. C., Craft, J. E., Meffre, et al 2019; 11 (519)

● **Transitional B cells in quiescent SLE: An early checkpoint imprinted by IFN.** *Journal of autoimmunity*

Dieudonné, Y., Gies, V., Guffroy, A., Keime, C., Bird, A. K., Liesveld, J., Barnas, J. L., Poindron, V., Douiri, N., Soulard-Sprauel, P., Martin, T., Meffre, E., Anolik, et al 2019; 102: 150-158

- **Human DEF6 deficiency underlies an immunodeficiency syndrome with systemic autoimmunity and aberrant CTLA-4 homeostasis.** *Nature communications*
Serwas, N. K., Hoeger, B., Ardy, R. C., Stulz, S. V., Sui, Z., Memaran, N., Meeths, M., Krolo, A., Yüce Petronczki, Ö., Pfajfer, L., Hou, T. Z., Halliday, N., Santos-Valente, et al
2019; 10 (1): 3106
- **B cell depletion or absence does not impede anti-tumor activity of PD-1 inhibitors.** *Journal for immunotherapy of cancer*
Damsky, W., Jilaveanu, L., Turner, N., Perry, C., Zito, C., Tomayko, M., Leventhal, J., Herold, K., Meffre, E., Bosenberg, M., Kluger, H. M.
2019; 7 (1): 153
- **Early B cell tolerance defects in neuromyelitis optica favour anti-AQP4 autoantibody production.** *Brain : a journal of neurology*
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- **AIRE expression controls the peripheral selection of autoreactive B cells.** *Science immunology*
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- **A novel ATM mutation associated with elevated atypical lymphocyte populations, hyper-IgM, and cutaneous granulomas.** *Clinical immunology (Orlando, Fla.)*
Minto, H., Mensah, K. A., Reynolds, P. R., Meffre, E., Rubtsova, K., Gelfand, E. W.
2019; 200: 55-63
- **Patients with common variable immunodeficiency with autoimmune cytopenias exhibit hyperplastic yet inefficient germinal center responses.** *The Journal of allergy and clinical immunology*
Romberg, N., Le Coz, C., Glauzy, S., Schickel, J. N., Trofa, M., Nolan, B. E., Paessler, M., Xu, M. L., Lambert, M. P., Lakhani, S. A., Khokha, M. K., Jyonouchi, S., Heimall, et al
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- **TACI Isoforms Regulate Ligand Binding and Receptor Function.** *Frontiers in immunology*
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- **Reprogramming human T cell function and specificity with non-viral genome targeting** *NATURE*
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- **Antigen-mediated regulation in monoclonal gammopathies and myeloma.** *JCI insight*
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2018; 3 (8)
- **Alternations in repertoire of T and B cell subsets in patients with partial recombination activating gene (RAG) deficiency with autoimmunity and history of viral infections**
Csomos, K., Ujhazi, B., Butte, M. J., Hernandez, J., Geha, R., Al-Herz, W., Notarangelo, L. D., Meffre, E., Walter, J. E.
SPRINGER/PLENUM PUBLISHERS.2018: 420-21
- **Impaired TLR9 responses in B cells from patients with systemic lupus erythematosus.** *JCI insight*
Gies, V., Schickel, J. N., Jung, S., Joublin, A., Glauzy, S., Knapp, A. M., Soley, A., Poindron, V., Guffroy, A., Choi, J. Y., Gottenberg, J. E., Anolik, J. H., Martin, et al
2018; 3 (5)
- **Naive B cells are prone to develop into polyreactive autoantibody secreting cells from adult RAG2-deficient patient with combined immunodeficiency**
Stowell, M. T., Walter, J. E., Pennix, T. C., Ujhazi, B., Mueller, G., Butte, M., Hoyte, E. G., Hernandez, J. D., Meffre, E. F., Csomos, K.
MOSBY-ELSEVIER.2018: AB22
- **Accumulation of Antigen-Driven Lymphoproliferations in Complement Receptor 2/CD21-/low B Cells From Patients With Sjögren's Syndrome.** *Arthritis & rheumatology (Hoboken, N.J.)*
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2017; 8 (1): 1462
- **Defective Early B Cell Tolerance Checkpoints in Sjögren's Syndrome Patients.** *Arthritis & rheumatology (Hoboken, N.J.)*
Glauzy, S., Sng, J., Bannock, J. M., Gottenberg, J. E., Korganow, A. S., Cacoub, P., Saadoun, D., Meffre, E.
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- **HSC extrinsic sex-related and intrinsic autoimmune disease-related human B-cell variation is recapitulated in humanized mice.** *Blood advances*
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2017; 1 (23): 2007-2018
- **Smith-Magenis Syndrome Patients Often Display Antibody Deficiency but Not Other Immune Pathologies** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY-IN PRACTICE*
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- **Germline hypomorphic CARD11 mutations in severe atopic disease.** *Nature genetics*
Ma, C. A., Stinson, J. R., Zhang, Y., Abbott, J. K., Weinreich, M. A., Hauk, P. J., Reynolds, P. R., Lyons, J. J., Nelson, C. G., Ruffo, E., Dorjbal, B., Glauzy, S., Yamakawa, et al
2017; 49 (8): 1192-1201
- **Self-reactive VH4-34-expressing IgG B cells recognize commensal bacteria.** *The Journal of experimental medicine*
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- **A novel humanized mouse model with significant improvement of class-switched, antigen-specific antibody production.** *Blood*
Yu, H., Borsotti, C., Schickel, J. N., Zhu, S., Strowig, T., Eynon, E. E., Frleta, D., Gurer, C., Murphy, A. J., Yancopoulos, G. D., Meffre, E., Manz, M. G., Flavell, et al
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- **Deficiency of base excision repair enzyme NEIL3 drives increased predisposition to autoimmunity.** *The Journal of clinical investigation*
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- **Decreased somatic hypermutation induces an impaired peripheral B cell tolerance checkpoint.** *The Journal of clinical investigation*
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2016; 126 (11): 4289-4302
- **PTPN22 inhibition resets defective human central B cell tolerance.** *Science immunology*
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- **Rituximab does not reset defective early B cell tolerance checkpoints.** *The Journal of clinical investigation*
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2016; 126 (1): 282-7
- **Activation-Induced Cytidine Deaminase Expression in Human B Cell Precursors Is Essential for Central B Cell Tolerance.** *Immunity*
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