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**BIOGRAPHICAL SKETCH**


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**NAME: Gabriele Di Sante**

eRA COMMONS USER NAME - ID: DISANTEG - 16153671, Institution: UNIVERSITY OF PERUGIA; Roles: PI SCIENTIST; IPF Code 6484701 DUNS ID 431191506

POSITION TITLE: MD, PhD, Assistant Professor

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**EDUCATION/TRAINING**


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INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
Università Cattolica del Sacro Cuore of Rome	MD	07/2007	Medicine; Immunology
Università Cattolica del Sacro Cuore of Rome	PhD	03/2011	Molecular Cardiology
Università Cattolica del Sacro Cuore of Rome	Residency	07/2016	Clinical Pathology

**A. Personal Statement**

I have been interested in the basic immunological mechanisms that sustain autoimmune diseases, in particular addressing the processes involved in epitope evasion from tolerance and the identification and characterization of the self-reactive T cell repertoire. During my PhD program, my residency in Clinical Pathology and more recently my Post Doc/Fellowship, I participated in numerous national and international conferences and published 30 peer-reviewed papers, with an H index of 15. I serve as MD for patients affected by different autoimmune diseases, completing my expertise with animal models and basic research with a clinical/translational approach. Since 2020 I achieved the role of Assistant Professor in General Pathology at the Università Cattolica del Sacro Cuore of Rome, School of Medicine, Biotechnology and Pharmacy. Since November 2021 I achieved the role of Assistant Professor in Human Anatomy at the University of Perugia, School of Medicine, where I have recently established my research laboratory.

**B. Positions and Honors**

- Degree in Medicine and Surgery and Doctorate in Cellular and Molecular Cardiology with excellence and Residency degree with excellence "cum laude".

**C. Contributions to Science**
**Funds obtained as Principal Investigator (PI) or Head of Operative Unit (HOU) or Collaborator.**

- "Definition and regulation of T cells specific for self-antigens of the CNS"- NMSS Research Project 03/2002-03/2005 (Collaborator)
- "Analysis of the role of Myelin-specific CD8+ cells in RR-EAE by TCR centered studies" – FISM Pilot Project 2003-2004 (Collaborator)
- "Transgenic models in complex diseases (Preparation of transgenic mice carrying the PLP-specific Beta chain(s) characteristic of public CD4+ cells)". FIRB MIUR – 2004-2006 (Collaborator)
- "Analysis of the shift in TCR repertoire usage during immune response to Her-2/neu in BALB/c and BALB/neuT mice" – PRIN MIUR 2005-2006 (Collaborator)
- "Molecular mechanisms for transfer of information from environment to T cells in the pathogenesis of EAE" - FISM Pilot Project 2009-2010 (Collaborator)
- "Determinants of virus-specific immune control in viral HIV co-infections". PRIN MIUR 2010-2011. (Collaborator)

- “Latent Tuberculosis and development of a model for post-exposure vaccination”. PRIN MIUR 2010-2012. (Collaborator)
- “Molecular mechanisms for transfer of information from environment to encephalitogenic T cells in the pathogenesis of EAE”. Role of TLR2 - FISM Project 2011-2012 (Collaborator)
- “Immunoscope analysis of T cell responses to MBP85-99 in Multiple Sclerosis.” (2011-2013) Don Carlo Gnocchi Foundation. (PI)
- “Treatment of multiple sclerosis using PIF, a nontoxic immune modulatory peptide.” NIH SBIR application 1R43NS080534-01 – The application has received a score of 25. Co-applicant
- “Janus-faced” liposomes as therapeutic tools to mediate a T suppressor phenotype in Multiple Sclerosis.” FISM Project 2017-2020 (Collaborator)
- “The S100B protein as a potential therapeutic target in multiple sclerosis. An in vivo study” FISM pilot project 2018/R/11 (Collaborator).
- “The S100B protein as a potential therapeutic target in multiple sclerosis. An in vivo study” FISM pilot project 2018/R/11 (Collaborator).

### Complete List of Published Work:

1. **Di Sante G**, Gremese E, Tolusso B, Cattani P, Di Mario C, Marchetti S, Alivernini S, Tredicine M, Petricca L, Palucci I, Camponeschi C, Aragon V, Gambotto A, Ria F and Ferraccioli G (2021) Haemophilus parasuis (Glaesserella parasuis) as a Potential Driver of Molecular Mimicry and Inflammation in Rheumatoid Arthritis. *Front. Med.* 8:671018. IF: 3.900
2. Buonsenso D, Di Giuda D, Sigfrid L, Pizzuto DA, **Di Sante G**, De Rose C, Lazzareschi I, Sali M, Baldi F, Chieffo DPR, Munblit D, Valentini P. Evidence of lung perfusion defects and ongoing inflammation in an adolescent with post-acute sequelae of SARS-CoV-2 infection. *Lancet Child Adolesc Health.* 2021 Sep;5(9):677-680. IF: 11.288
3. Michetti F\*, **Di Sante G\***, Clementi ME, Sampaolese B, Casalbore P, Volonté C, Romano Spica V, Parnigotto PP, Di Liddo R, Amadio S, Ria F. Growing role of S100B protein as a putative therapeutic target for neurological- and nonneurological-disorders. *Neurosci Biobehav Rev.* 2021 May 7;127:446-458. doi: 10.1016/j.neubiorev.2021.04.035 IF: 8.989
4. De Maria Marchiano R\*, **Di Sante G\***, Piro G, Carbone C, Tortora G, Boldrini L, Pietragalla A, Daniele G, Tredicine M, Cesario A, Valentini V, Gallo D, Babini G, D'Oria M, Scambia G. Translational Research in the Era of Precision Medicine: Where We Are and Where We Will Go. *J Pers Med.* 2021 Mar 18;11(3):216. doi: 10.3390/jpm11030216 doi: 10.3390/jpm11030216. IF: 4.945
5. Spagni G, Todi L, Monte G, Valentini M, **Di Sante G**, Damato V, Marino M, Evoli A, Lantieri F, Provenzano C. Human Leukocyte Antigen Class II associations in late-onset Myasthenia Gravis. *Ann Clin Transl Neurol.* 2021 Mar;8(3):656-665. doi: 10.1002/acn3.51309 doi: 10.1002/acn3.51309 IF: 3.930
6. Aceti A, Margarucci LM, Scaramucci E, Orsini M, Salerno G, **Di Sante G**, Gianfranceschi G, Di Liddo R, Valeriani F, Ria F, Simmaco M, Parnigotto PP, Vitali M, Romano Spica V, Michetti F. Serum S100B protein as a marker of severity in Covid-19 patients. *Sci Rep.* 2020 Oct 29;10(1):18665. doi: 10.1038/s41598-020-75618-0. IF: 3.998
7. Marchese E, Valentini M, **Di Sante G**, Cesari E, Adinolfi A, Corvino V, Ria F, Sette C, Geloso MC. Alternative splicing of neurexins 1-3 is modulated by neuroinflammation in the prefrontal cortex of a murine model of multiple sclerosis. *Exp Neurol.* 2020 Oct 12:113497. IF: 4.562
8. **Di Sante, G.**, Tredicine, M., Rolla, S., Di Pino, A., Ria, F. Past and future of the molecular characterization of the T cell repertoire: Some highlights of eli sercarz's contributions. *Critical Reviews in Immunology*, 2020, 40(3), pp. 249-253 IF 2.327
9. Buonsenso D, **Di Sante G**, Sali M. Cytokine Profile in an Adolescent With Pediatric Multisystem Inflammatory Syndrome Temporally Related to COVID-19. *Pediatr Infect Dis J.* 2020 Aug;39(8):e213-e215. IF: 2.723

10. **Di Sante G**, Amadio S, Sampaolese B, Clementi ME, Valentini M, Volonté C, Casalbore P, Ria F, Michetti F. The S100B Inhibitor Pentamidine Ameliorates Clinical Score and Neuropathology of Relapsing-Remitting Multiple Sclerosis Mouse Model. *Cells*. 2020 Mar 18;9(3):748. doi: 10.3390/cells9030748. IF:6.600.
11. Marangi G, Garcovich S, **Di Sante G**, Orteschi D, Frangella S, Scaldaferrri F, Genuardi M, Peris K, Gurrieri F, Zollino M. Complex Muco-cutaneous Manifestations of CARMIL2-associated Combined Immunodeficiency: A Novel Presentation of Dysfunctional Epithelial Barriers. *Acta Derm Venereol*. 2020 Jan 23;100(1):adv00038. IF: 4.437
12. Ria F, Pirolli D, **Di Sante G**, Righino B, Gremese E, Gervasoni J, Nicolò C, Giardina B, Ferraccioli G, De Rosa MC. Selective Inhibitors of T Cell Receptor Recognition of Antigen-MHC Complexes for Rheumatoid Arthritis. *ACS Med Chem Lett*. 2019 Mar 13;10(4):644-649. IF: 3.975
13. Alivernini S., Toluoso B., Petricca L., Bui L., Di Mario C., Gigante M.R., **Di Sante G.**, Benvenuto R., Fedele A.L., Federico F, Ferraccioli G., Gremese E. Synovial predictors of differentiation to definite arthritis in patients with seronegative undifferentiated peripheral inflammatory arthritis: microRNA signature, histological and ultrasound features. *Front. Med.* - Accepted 6 Jun 2018 DOI: 10.3389/fmed.2018.00186. IF: 3.900
14. Erre, G.L., Piga, M., Fedele, A.L., Mura, S., Piras, A., Cadoni, M.L., Cangemi, I., Dessi, M., **Di Sante G**, Toluoso, B., Gremese, E., Cauli, A., Mangoni, A.A., Saba, P.S., Carru, C., Ferraccioli, G., Mathieu, A., Passiu, G. Prevalence and Determinants of Peripheral Microvascular Endothelial Dysfunction in Rheumatoid Arthritis Patients: A Multicenter Cross- Sectional Study. *Mediators of inflammation*, 2018: doi: 10.1155/2018/6548715 IF: 4.711
15. Marino M, Frisullo G, **Di Sante G**, Samengo DM, Provenzano C, Mirabella M, Pani G, Ria F, Bartoccioni E. Low reliability of anti-KIR4.183-120 peptide auto-antibodies in multiple sclerosis patients. *Multiple sclerosis*, 2017: doi: 10.1177/1352458517711275: IF: 5.412
16. Kurowska-Stolarska M, Alivernini S, Melchor EG, Elmesmari A, Toluoso B, Tange C, Petricca L, Gilchrist DS, **Di Sante G**, Keijzer C, Stewart L, Di Mario C, Morrison V, Brewer JM, Porter D, Milling S, Baxter RD, McCarey D, Gremese E, Lemke G, Ferraccioli G, McSharry C, McInnes IB. MicroRNA-34a dependent regulation of AXL controls the activation of dendritic cells in inflammatory arthritis. *Nature communications*, 2017;(8); doi: 10.1038/ncomms15877 IF: 14.919
17. Alivernini S, Toluoso B, Petricca L, Bui L, **Di Sante G**, Peluso G, Benvenuto R, Fedele AL, Federico F, Ferraccioli G, Gremese E. Synovial features of patients with rheumatoid arthritis and psoriatic arthritis in clinical and ultrasound remission differ under anti-TNF therapy: a clue to interpret different chances of relapse after clinical remission? *Annals of the rheumatic diseases*, 2017;(76); 1228-1236, IF: 16.102
18. **Di Sante G**, Toluoso B, Ria F, Laura Fedele A, Gremese E, Ferraccioli G (2016). Is it necessary to be citrullinated to have restricted clonotypes reacting with Collagen type II? Comment to article "A novel HLA-DRB1\*10:01 restricted T cell epitope from citrullinated type II collagen relevant for Rheumatoid Arthritis. *Arthritis & rheumatology*, 2017. doi: 10.1002/art.39661, IF: 7.750
19. Palucci I, Camassa S, Cascioferro A, Sali M, Anoosheh S, Zumbo A, Minerva M, Iantomasi R, De Maio F, **Di Sante G**, Ria F, Sanguinetti M, Palù G, Brennan MJ, Manganelli R, Delogu G. PE\_PGRS33 contributes to Mycobacterium tuberculosis Entry in Macrophages through Interaction with TLR2. *Plos one*, 2016;(11), doi: 10.1371/journal.pone.015080. IF: 2.806
20. Piermattei A, Migliara G, **Di Sante G**, Foti M, Hayrabydyan SB, Papagna A, Geloso MC, Corbi M, Valentini M, Sgambato A, Delogu G, Constantin G, Ria F. Toll-Like Receptor 2 Mediates In Vivo Pro- and Anti-inflammatory Effects of Mycobacterium Tuberculosis and Modulates Autoimmune Encephalomyelitis. *Frontiers in immunology*, 2016;(24), doi: 10.3389/fimmu.2016.00191. IF: 6.429
21. **Di Sante G**, Toluoso B, Fedele AL, Gremese E, Alivernini S, Nicolò C, Ria F, Ferraccioli G. Collagen Specific T-Cell Repertoire and HLA-DR Alleles: Biomarkers of Active Refractory Rheumatoid Arthritis. *Ebiomedicine*, 2015;(2); 2037-2045, IF: 6.183

22. Valentini M., Piermattei A., **Di Sante G**, Migliara G., Delogu G., Ria F. (2014). Immunomodulation by gut microbiota: role of toll like receptors expressed by T cells. *Journal of immunology research*, vol. 2014, ISSN: 2314-7156, doi: 10.1155/2014/586939 IF: 3.739
23. Marino M., Maiuri M., **Di Sante G.**, Scuderi F, La Carpia F, Trakas N, Provenzano C, Zisimopoulou P, Ria F, Tzartos SJ, Evoli A, Bartoccioni E. T cell repertoire in DQ5-positive myasthenia gravis patients. *Journal of Autoimmunity*. 2014 Jan 4. doi: 10.1016/j.jaut.2013.12.07. IF: 8.410
24. Totaro MC, Cattani P, Ria F, Tolusso B, Gremese E, Fedele AL, D'Onghia S, Marchetti S, **Di Sante G**, Canestri S, Ferraccioli G. *Porphyromonas gingivalis* and the pathogenesis of rheumatoid arthritis: analysis of various compartments including the synovial tissue. *Arthritis Research Therapy* 2013 15(3) R56. IF: 4.906
25. Zumbo, A., Palucci, I., Cascioferro, A., Sali, M., Ventura, M., D'Alfonso, P., Iantomasi, R., **Di Sante, G.**, Ria, F., Sanguinetti, M., Fadda, G., Manganelli, R., Delogu, G., Functional dissection of protein domains involved in the immunomodulatory properties of PE\_PGRS33 of *Mycobacterium tuberculosis*. *Pathogens and Disease* 2013, 69(3):232-239. IF: 2.921
26. **Di Sante G.**, Migliara G, Valentini M, Delogu G, Ria F. Regulation of and regulation by CD44: a paradigm for complex regulatory networks. *International trends in immunity*, 2013; 2 (4): 33-42 IF N/A
27. Nicolò C, **Di Sante G.**, Procoli A., Migliara G., Piermattei A., Valentini M., Delogu G., Cittadini AM., Constantin G. and Ria F. M tuberculosis in the adjuvant modulates time of appearance of CNS specific effector T cells in the spleen through a polymorphic site of TLR2. *PLoS ONE* 8(2): e55819. Feb 11 2013. \*equally contributed IF 3.534
28. Nicolò C., **Di Sante G.**, Migliara G., Valentini M., Piermattei A., Delogu G., Ria F. Intracellular Bacteria can cause EAE in SJL mice or modify cell-specific T cell repertoire. *Journal of Neurological Sciences*. 2011 Dec 15; 311 (1-2):103-. Epub 2011 Sep 13. IF: 2.929
29. Pandolfi F., Cianci R., Casciano F., Pagliari D., De Pasquale T., Landolfi R., **Di Sante G.**, Kurnick JT., Ria F. Skewed T cell receptor repertoire (more than a marker of malignancy. A tool to dissect the immunopathology of inflammatory diseases). *Journal of Biol. Reg. and hom. agents*. 2011 Apr-Jun; 25 (2) 153-61. IF: 4.168
30. Sali M., **Di Sante G.**, Cascioferro A., Zumbo A., Nicolò C., Donà V., Rocca S., Procoli A., Morandi M., Ria F., Palù G., Fadda G., Manganelli R., Delogu G. Surface expression of MPT64 as a fusion with the PE domain of PE\_PGRS33 enhances BCG protective activity against *Mycobacterium tuberculosis* in mice. *Infection and immunity*, december 5 2010 vol. 78(12); p. 5202-5213. IF: 4.480
31. De Rosa MC., Giardina B., Bianchi C., Carelli Alinovi C., Pirolli D., Ferraccioli GF., De Santis M., **Di Sante G.**, Ria F. Modeling the Ternary Complex TCR-Vbeta CollagenII(261- 273)/HLA-DR4 Associated with Rheumatoid Arthritis. *PLOS ONE* July 14 2010, ISSN: 1932- 6203. IF: 4.411
32. Rolla S, Ria F, Occhipinti S, **Di Sante G.**, Iezzi M, Spadaro M, Nicolò C, Ambrosino E, Fiore Merighi I, Musiani P, Forni G, Cavallo F (2010). Erbb2 DNA vaccine combined with Treg cell deletion enhances antibody response and reveals latent low-avidity T cells. Potential and limits of its therapeutic efficacy. *Journal of Immunology* 2010 Apr 30. 184;6124-6132. IF: 6.074
33. Nicolò C., Sali M, **Di Sante G.**, Geloso M.C., Signori E., Penitente R., Uniyal S., Rinaldi M., Fazio V.M., Chan B.M.C., Delogu G. and Ria F. *Mycobacterium Smegmatis* expressing a chimeric protein MPT64-PLP139-151 reorganizes the PLP-specific T cell repertoire favouring a CD8-mediated response and induces a relapsing EAE. *The Journal of Imm.* 2010 Jan 1;184 (1):222-35. IF: 6.074
34. F. Ria, R. Penitente, M. De Santis, C. Nicolò, **G. Di Sante**, M. Orsini, D. Arzani, A. Fattorossi, A. Battaglia, G.F. Ferraccioli. Collagen-specific T cell repertoire in blood and synovial fluid varies with disease activity in Early Rheumatoid Arthritis (ERA). *Arthritis Research & Therapy* 2008 Nov 17, 10(6):R135. IF: 5.286
35. R. Penitente, C. Nicolò, P. Van den Elzen, **G. Di Sante**, F. Aloisi, Eli E. Sercarz, and F. Ria. Administration of PLP139-151 primes T cell distinct from those spontaneously responsive to this antigen. *The journal of Immunology*; 180(10):6611-22 (2008 May 15) IF: 6.321

36. Nicolò C, **Di Sante G**, Orsini M, Rolla S, Columba-Cabezas S, Romano Spica V, Ricciardi G, Chan BM, Ria F. Mycobacterium tuberculosis in the adjuvant modulates the balance of Th immune response to self-antigen of the CNS without influencing a "core" repertoire of specific T cells. *Int Immunol.* 2006 Feb;18(2):363-74. doi: 10.1093/intimm/dxh376. Epub 2006 Jan 13. PubMed PMID: 16415105. IF: 4.015

## Bibliometric indexes

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Cumulative Impact Factor: **197,214**  
 Mean Impact Factor: **5,634**  
 Number of publications: **35**  
 Number of first names: **11**  
 Normalized Citations: **23,3**  
 Citations: **558**  
 Contemporary H-Index: **13**  
 i-10 H Index: **23**  
 Scopus H Index: **15**

### D. Additional Information: Research Support and/or Scholastic Performance

#### Research

- Role of Antigen presenting cells from lymph node and CNS in vivo and in vitro.
- Animal models of EAE, Collagen Induced Arthritis and immunosuppressed transgenic mice.
- Balance of Th1/Th17/Treg subpopulations and B cell maturation.
- Generation of Car-T cells and Dendritic cells for application in immunotherapy

Position	Name and address of host Institute	From	To
Internship	Inst. of General Pathology (Prof. F. Ria), 'Università Cattolica del Sacro Cuore, Rome Italy.	2002	2007
Internship	Department of Cardiology (prof Mansourati), "Université de la Bretagne" Brest, France.	2004	2005
Internship	Department of Rheumatology (Prof. G.F. Ferraccioli) Università Cattolica del Sacro Cuore, Rome	2004	2006
PhD Student	PhD program in 'Cellular and Molecular Cardiology' Università Cattolica del Sacro Cuore, Rome - Italy.	2007	2011
Residency	Inst. of General Pathology (Prof. T Galeotti- Prof R. De Maria), Università Cattolica del Sacro Cuore, Rome	2011	2016
Fellowship Post Doc	Department of Rheumatology (Prof. G.F. Ferraccioli) Università Cattolica del Sacro Cuore, Rome Italy.	2015	2017
Research Asssitant	Inst. of General Pathology (Prof. R. De Maria), 'Università Cattolica del Sacro Cuore, Rome Italy.	2017	2019
Assistant Professor	Inst. of General Pathology, 'Università Cattolica del Sacro Cuore, Rome Italy.	2020	2021
Assistant Professor	Inst. of Human Anatomy, University of Perugia, Italy.	2021	To date

#### Skills:

- Cellular biology techniques
- Molecular Biology techniques
- Grant and project manager
- Team coordinator
- Bigdata and databases analyst.