

BIOGRAPHICAL SKETCH

Name: Antonio Di Giacomo	Position/Title: Clinical Pathologist, Diagnostic Haematology and Coagulation Unit, Monaldi Hospital, Naples
---------------------------------	---

Education

Institution and Location	Degree	Year Conferred	Field of Study
University of Naples "Federico II"	MD	1976	Medicine and Surgery
University of Naples "Federico II", Institute of Microbiology	PhD	1982	Virology
Trudeau Institute, Saranac Lake, NY, USA	PhD	1986	Cancer Immunology

Research and Professional Experience**Positions and Employment**

- 1972-1973 Residency at the Department of General Surgery, Pellegrini Hospital, Naples
- 1973-1974 Residency at the Institute of Medical Pathology, University of Naples "Federico II"
- 1975-1976 Residency at the Geriatric Department, Pace Hospital, Pozzuoli (NA)
- 1976-1978 Residency at Laboratory of Pathology, Monaldi Hospital, Naples
- 1978-1987 Assistant Pathologist at Monaldi Hospital, Naples
- 1988-present Director Pathologist, Haematology and Coagulation Unit, Monaldi Hospital, Naples
- 2000-present Lecturer of Medical Genetics for the superior Nursing School at the Second University of Naples

Research Experience

- 1975-1976 Research fellow at **Hoechst Experimental Laboratories**, Naples, studying the circadian secretion patterns of insulin in perfused rat pancreas for a better therapy of diabetes
- 1977-1978 Research fellow on microbial genetics at the **Institute of Genetics and Biophysics (IGB)**, laboratory of prof. M.A.Nelson, Naples, studying molecular patterns of Phage recognition in E-coli
- 1979-1980 Research in haematology at the **Institute of Genetics and Biophysics (IGB)**, laboratory of prof. L.Luzzatto, Naples. Project: erythroid cultures in vitro.
- 1983 Invited Lecturer at the **Department of Immunology, University of Rochester, NY**.
- 1984-1986 Post-doctoral Fellowship at the **Trudeau Institute, NY**, where he achieved the position of "Senior Independent Investigator".
- 1989-1990 Research Fellow-Instructor for tumor immunology at the **Institute of Experimental Biology of the University of Tromso**, Norway, with a grant of the Norwegian Cancer Society (NCS). Project: immunotherapy of cancer.
- 1991- present Co-founder with professors S. Zappacosta, A. Nisonoff, M.Brai, GB.Ferrara, of the **Advanced School of Immunology "Ruggero Ceppellini" in Naples**. Organization of annual international courses on different areas of Immunology. Research collaboration in Immunology with prof. Zappacosta's group.
- 1995 Visiting Scientist at the **Institute of Medical Microbiology, Free University of Berlin**, Germany, collaborating at research projects on the immunology of infectious diseases and tumors, with a grant of the Deutches Krebsforschung.

Major achievements

Dr. Di Giacomo has been one of the pioneers of the investigation on the cells of the immune system that negatively regulate the specific immune response to immunogenic tumors, the once called **suppressor Tcells**. In that context he has conducted advanced research in one of the most prestigious American institutions, the Trudeau Institute of Saranac Lake (New York), where eminent scientists such as George Mackaness and Robert North have set the bases for cellular immunology discovering the activation of macrophages and the role of lymphocytes in immune reaction against tuberculosis and other diseases. While in Robert North's lab, he showed for the first time *in vivo*, against current opinion, that cells that suppress the immune reaction toward immunogenic tumors are lymphocytes carrying the CD4+ phenotype rather than the CD8+ and that the latter act as suppressors only in a DTH-type of reaction to tumor antigens. This -- once a very controversial issue -- re-opened the field of cellular immune regulation and immune tolerance, that later was re-formulated with the works of Shimon Sakaguchi on **T-regulatory cells** (Tregs). Since the translational aspects of research are his main interest, Dr. Di Giacomo's work has always been focused on the problem of identifying experimentally *in vivo*, and finally in human patients, the stage of the ongoing immune response in a tumor-carrying organism in order to manipulate it, shifting the outcome from tolerance to rejection. He has designed some projects in that sense, that are currently under study.

Another main interest of Dr. Di Giacomo as a clinician, is to study the link between immune response and activation of blood coagulation in many pathologies, such as infectious diseases and cancer. This confirms the importance of variations in blood clotting detected by laboratory tests and the state of a patient's disease or stage of treatment, often not well defined. Better knowledge in this field would help

greatly in understanding the relationship between immunity and blood coagulation and, translationally, the pathology under scrutiny and the diagnostic and therapeutic approach to it.

Professional Membership:

- Scuola Superiore di Immunologia “Ruggero Ceppellini” : Founder and Member of the Board of the Directors

Clinical and Scientific Collaborators:

- Department of Oncology, Monaldi Hospital, Naples.
- Department of Clinical Pathology, Monaldi Hospital, Naples.
- Laboratory of Immunology, Institute of Endocrinology and Experimental Oncology, Consiglio Nazionale delle Ricerche (IEOS-CNR), Naples.

Meetings and Courses

- 1990 “Modelli di immunoterapia dei tumori solidi”, Hotel S. Lucia, Naples.
- 1991 “Immunologia dei tumori”, Scuola Superiore di Oncologia e Scienze Biomediche, Genoa.
- 1992 “Immunology of Bone Marrow Transplantation”, international course in Naples.
- 1994 “Progress and Perspectives in Vaccination”;
“T-cell Activation, Anergy and Immunosuppressive Drug Action”, int’l courses, Naples.
- 1995 “Immunity to intracellular Bacteria and Parasites”, international course, Positano (SA).
“L’Immunità in Patologia Umana” residential course, Naples.
- 1996 “Le Malattie del tessuto emopoietico in gravidanza”, meeting in Naples.
“Mechanisms and Manipulation of Autoimmunity”, international course, Naples.
“HLA and Tumours”, international course, Naples.
- 1997 “Cytokines in Immunity”, international course, Naples.
- 1998 “Emergence of Infectious Diseases: an Evolutionary Perspective”, int’l course, Naples.
- 1999 “Dendritic Cell Physiology”, international course, Positano (SA).
“L’immunità in Patologia Umana 1999”, residential course, Naples.
- 2000 “Escape from Immune Surveillance of Tumours and Bacteria”, int’l course, Naples.
- 2001 “The Physiological Basis of Memory in the Immune System”, int’l course, Naples.
- 2002 “L’Immunità in Patologia Umana 2002”, residential course, Naples.
“The Immune System in Tuberculosis”, international course, Naples.
- 2003 “Innate Immunity in Self-Non-Self Recognition”, international course, Naples.
“La Citometria a Flusso”, residential course, Napoli
“La Malattia Tromboembolica Venosa”, residential course, Naples.
- 2007 “The Recrudescence of an Old Disease: Tuberculosis”, international course, Naples.
- 2008 “Tumour Immune Escape 2008”, international course, Sorrento (NA).
- 2009 “The Role of B Cells in the Physiology and Pathology of the Immune System”, international course, Sorrento (NA).
- 2010 “Innovative Strategies for Vaccines: Malaria, HIV, TBC”, int’l course, Sorrento (NA).

- 2011 “Innovative Strategies to Prevent Transplant Rejection”, int’l course, Sorrento (NA).
2012 “Innate Immunity 2012: from Evolution to Revolution”, int’l course, Sorrento (NA).
2013 “Novel Vaccination Strategies against the Three Killers”, int’l course, Castellammare di Stabia (NA).
2014 “The Maternal Immune System in Pregnancy”, int’l course, Castellammare di Stabia (NA).
2015 “T-Cell Biology and Metabolism”, international course, Naples.

PUBLICATIONS

International publications:

- Di Giacomo A. “Ruggero Ceppellini Advanced School of Immunology”: Malaria, Tuberculosis, HIV, novel vaccination strategies against the three major killers. **Eur. J. Immunol** 44 (6): 1573-4 (2014).
- Di Giacomo A. “Ruggero Ceppellini Advanced School of Immunology”: innate immunity 2012, from evolution to revolution. **Eur. J. Immunol.** 43(1): 13-4, (2013).
- Di Giacomo A. “Ruggero Ceppellini Advanced School of Immunology”2010: **Eur. J. Immunol.** 40 (8), 2080-1 (2010).
- Di Giacomo A. “Ruggero Ceppellini Advanced School of Immunology” 2009: **Eur. J. of Immunol.** 39,1692, (2009).
- Galgani M., Di Giacomo A., Matarese G., La Cava A. The yin and yang of CD4+ Regulatory T Cells in Autoimmunity and Cancer. **Curr. Med. Chem.** 16 (35), 4626-31, (2009).
- Sanna V. Di Giacomo A. La Cava A., Lechler R.I. Fontana S., Zappacosta S., Matarese G. Leptin surge precedes onset of autoimmune encephalomyelitis and correlates with development of pathogenic T cell responses. **J. Clin. Invest.** Jan 15: 111 (2), 241-50, (2003).
- Matarese G., Castelli-Gattinara G., Ciancrini C., Bernardi S., Romiti M., Bavarese C., Di Giacomo A., Rossi P., Racioppi L. Serum leptin and CD4+ T lymphocytes in HIV+ children during highly active antiretroviral therapy. **Clin. Endocrinol. (Oxf.)** Nov, 57 (5),643-6, (2002).
- Matarese G., Sanna V., Di Giacomo A., Lord G.M., Howard J.K., Bloom S. R., Lechler R.I., Fontana S., Zappacosta S. Leptin potentiates experimental autoimmune Encephalomyelitis i SJL female mice and confers susceptibility to males. **Eur. J Immunol.** 31, 1324-32, (2001).
- Matarese G. Di Giacomo A., Sanna V., Lord G.M., Howard G.K., Di Tuoro A., Bloom S.R., Zappacosta S., Fontana S. Requirement for leptin in the induction and progression of autoimmune encephalomyelitis. **J. Immunol.** 166, 5909-16, (2001).
- Di Giacomo A., North R.J. Subtherapeutic numbers of tumor-sensitized, L3T4+, Ly 1-2+ T cells are needed for endotoxin to cause regression of an established immunogenic tumor. **Immunology**, 60, 367-73, (1987).
- Di Giacomo A., North R.J. Endotoxin-induced tumor regression depends on presence of subtherapeutic numbers of tumor-sensitized T cells. **E.O.S. J. Immunol. Immunopharmacol.** 7, (suppl.3), 238, (1986).
- Di Giacomo A., North R.J. T cell suppressors of antitumor immunity: the production of Ly 1-2+ suppressors of delayed sensitivity precedes the production of suppressors of protective immunity. **J.Exp.Med.** 164, 1178-92, (1986).
- Di Giacomo A.; Miraglia T., Bellettini C., Paduano R. Family screening in two case of microdrepanocytosis **J. Res. Lab. Med.** X, 3, 307-9, (1983).

- Osorio J., Melani F., Verrillo A., Di Giacomo A., Campillo J.E., Armentano V. Effects of somatostatin on the protecting action of glucagon, cyclic adenosine monophosphate and theophylline on glucose-induced insulin release. **Diab. Metab.** Mar, 5(1), 27-31, (1979).
- Melani F., Verrillo A., Di Giacomo A., Armentano V., Osorio J. Variations Journalières de la sécrétion d'insuline chez des sujets normaux et diabétiques. **Journ. Annu. Diabetol. Hotel Dieu**, Paris 167-75, (1977).
- Melani F., verrillo A., Osorio J., Di Giacomo A., Armentano V., De Ritis F. Periodicity in beta-cell responsiveness and diurnal variation of glucose tolerance. **IX Congress of the International Diabetes Federation, New Dehli, India. Excerpta Medica, Amsterdam, (1976).**
- Osorio, J, Melani F., Verrillo A., Armentano V., Di Giacomo A., De Ritis F. The effect of glucagon, theophylline and dibutyryl 3'5' cAMP on insulin release inhibited by somatostatin. **Twelfth annual Meeting of the European Association for the Study of Diabetes, Helsinki, Finland, Diabetologia**, 12, 415, (1976).
- Melani F., Verrillo A, Di Giacomo A., Osorio J., Armentano V., De Ritis F. Diurnal pattern of blood sugar and serum immunoreactive insulin (IRI) in response to glucose and/or glucagon in healthy and diabetic subjects. **Proceedings of the XII International Society for Chronobiology, Washington D.C., Chronobiologia**, 4 (suppl.), 255-63, (1975).

National publications:

- Piccolboni D., Vaccarella G, Amorelli G., De Vincentiis L., Di Filippo O., Di Giacomo A. Nutrizione artificiale ed ormone della crescita: effetti metabolici ed immunitari nel paziente chirurgico. **Rivista Italiana di Nutrizione Parenterale ed Enterale**. XII, 3, 174-81, (1994).
- Piccolboni D., Vaccarella G., De Vincentiis L., Di Giacomo A, Di Filippo O., De Vincentiis E. La nutrizione artificiale post-operatoria: correlazione tra immunità e stato nutrizionale. **Bollettino della Società Italiana di Chirurgia**. XV,3,117-22, (1994).
- Sarnelli B., Di Filippo O., Varlese M.G., Minicucci A.M., Di Giacomo A. Cellule CD4+ sopprimono in vitro la citotossicità antitumorale. **Rassegna Internazionale di Clinica e Terapia** LXX, 23, 1991-5, (1990).
- Perrella O., Izzo E., Liberti A., Di Giacomo A. Caruso I., Iaccarino C., Soscia M. Linfociti TcR gamma/delta nelle infezioni HIV-1. **Pandora**,3,17-20, (1990).
- Micillo F., Dericoloso A., Catena E., Tranchese D., Melito P., Di Filippo O., Di Giacomo A. Immunodeficiency Syndrome: "thymopentin". **Archivio Monaldi**, ju.-dec. 44 (4-6), 767-8, (1989).
- Di giacomo A, Di Matteo L., Dericoloso A., Tranchese D., Di Francia P., Buonpane S, Clery M. Impiego degli anticorpi monoclonali per lo studio delle sottopopolazioni linfocitarie mediante citometria a flusso. **Prospettive in Clinica e terapia**, ½, 19-23, (1985).
- Di giacomo A., Di Matteo L., Dericoloso A., Tranchese D., De Vito R., Zinzi V. Impiego degli anticorpi monoclonali in fase solida nella determinazione delle classi linfocitarie periferiche in pazienti neoplastici. **Archivio Monaldi**, XXXIV, 4, (1984).
- Di Giacomo A. Le cellule NK e l'immunità cellulo-mediata. **Prospettive in Clinica e Terapia**, 1, 71-3, (1984).
- Miraglia T., Di Giacomo A., Caterino R. Su un caso di infarto polmonare in portatore di microcitemia. **Archivio Monaldi**, 36, (1981).
- Cerasuolo F., caianiello G., Di Giacomo A., Caprioli V., Clery M. Siano B. Pazienti sottoposti ad interventi cardiocirurgici: alcuni indici di vitalità leucocitaria. **La Riforma Medica**, 96, 511-16, (1981).
- Ruggiero G., Casentini E, Perna F., Carbone E., Stefanelli F., Cavalcanti R., Di Giacomo A., Bariffi F., Zappacosta S. A study of the possible correlation between genetic background and immune control of tuberculosis. **Rapporti ISTISAN**,97/1, 104, (1977).

- Di Giacomo A., gennarelli E., Miranda S. PAS positività linfocitaria in pazienti neoplastici: possibile significato fisiopatologico ed ipotesi di lavoro. **Archivio Monaldi**, 32,5-6, (1977).
- Verrillo A., Armentano V., Di Giacomo A., Melani F. Variazioni circadiane della glicemia e dell'insulinemia nei soggetti diabetici. Estratti da **Rassegna di Medicina Sperimentale**, 3, (1976).
- Verrillo A., Armentano V., Di Giacomo A., Osorio J. Melani F., De Ritis F. Variazioni circadiane della glicemia e dell'insulinemia dopo carico di glucosio e glucagone nei soggetti normali e nei soggetti diabetici. **Atti del VI Congresso Nazionale della Società Italiana di Diabetologia, Catania, (1976).**
- Osorio J., verrillo A., Di Giacomo A., Armentano V., Melani F., De Ritis F. Effetto del glucagone, dibutyryl 3'5' cAMP e della teofillina sull'inibizione della secrezione insulinica indotta dalla somatostatina in vivo e nel pancreas perfuso di ratto. **Atti del VIC congresso Nazionale della Società Italiana di Diabetologia, Catania, (1976).**

Books:

- Fontana S., De Rosa V., Di Giacomo A : Biochimica del Sistema Immunitario, in:**Biochimica Umana, Idelson-Gnocchi**, Napoli, (2014).
- Di Giacomo A., Perna F. : Immunobiologia e Immunoterapia in Chirurgia, in:Trattato di Clinica e Terapia Chirurgica. **Piccin Nuova Libreria**, Padova, 275-285, (2001).
- Perna F., Bianchino G., Sanduzzi A., Giacomelli P., Di Giacomo A. La tubercolosi come modello di malattia ad estrinsecazione variabile in relazione alle differenti condizioni immunologiche individuali, in: **Lotta contro la Tubercolosi e le Malattie Polmonari Sociali**. Roma, 2, 176-88, (1988).
- North, R.J, Di Giacomo A., Dye E.S. The generation and down-regulation of the immune response to progressive tumors, in: Development and Recognition of the Transformed Cell. **Plenum Publishing Corporation**, New York, 395-405, (1987).
- North R.J., Di Giacomo A., Dye E.S. Suppression of anti-tumor Immunity, in: Research Monographs in Immunology, 2, **Elsevier, Amsterdam**, 125-39, (1987).
- North R.J., Di Giacomo A. Generation and Suppression of the Immune Response to Immunogenic Tumors, in: Mechanisms of Host Resistance to Infectious Agents, Tumors and Allografts, **The Rockefeller University Press**, New York, 387-96, (1986).