

**PAOLO MACOR**

*SHORT CURRICULUM VITAE*

## PERSONAL DATA

FIRST NAME and SURNAME: **PAOLO MACOR**  
NATIONALITY **Italian**  
PLACE and DATE of BIRTH **Latisana (UD),  
August 13<sup>th</sup>, 1976**  
ITALIAN TAX CODE **MCRPLA76M13E473T**

Work **Immunopathology Unit  
Dept. of Life Sciences  
University of Trieste  
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## EDUCATION AND WORK EXPERIENCE

- **Researcher (RTD-b) at the University of Trieste since November 2016**
- **Professor of Immunotherapy at the University of Trieste since 2015**
- **Professor of Molecular Immunology at the University of Trieste since 2012**
- Scientific Vice-Director of Callerio Foundation - ONLUS, Trieste, from March 2014 to December 2015.
- Researcher (RTD-a) at the University of Trieste from May 2010 to April 2016
- **Entrepreneurs in Clinical Academia (ECA)**, initiative from the Federation of Clinical Immunology Societies (FOCIS), supported by Cellgene and delivered by INSEAD: Business School for the World. (September 2014).
- **Senior Researcher at ADIENNE Pharma and Biotech from February 2008 to May 2010**
- **PhD in Clinical and Experimental Pathology** at the Dept of Physiology and Pathology, University of Trieste (March 2008)
- **Degree in Biotechnology in Medicine** at the University of Trieste presenting a thesis in Immunology (November 2004).
- Guest Researcher in the Laboratory of Molecular Therapy (Silvana Canevari - Istituto Nazionale Tumori, Milano – 2004)
- Fellow researcher in the Laboratory of prof. F. Tedesco (May 1999 -December 2004)
- **Degree in Biomedical Lab Technician** obtained at the University of Trieste presenting a thesis in Immunology (November 1998).

## ACTIVITIES

- 42 publications in international peer reviewed journals
- Invited speaker or oral presentation in more than 40 international meetings and conferences

- Coordinator or unit leader of several research projects, financed by Italian Association for Cancer Research (AIRC), Italian Ministry of Health, Fondazione Italiana Ricerca sull'Artrite (FIRA), Fondazione Casali, University of Trieste or financed by private companies.
- Proponent and Project manager of PRATH, a collaborative project financed by the European Community in the FP7 (TOPIC: HEALTH-2009-2.4.4-2) entitled: **Preclinical study of Recombinant human Anti-C5 for the Treatment of atypical HUS (PRATH).**
- **Member of the board of the Italian Cancer Society (SIC 2008 – 2010).**
- Member of the European Association for Cancer Research (EACR), Italian Society of Immunology, Clinical Immunology and Allergology (SIICA), Italian Society for Cancer research (SIC), Inter-department Center of Molecular Medicine (CIMM).
- Reviewer for Blood, British Journal of Cancer, Leukemia, Molecular Immunology, Immunological Investigation, Journal of Biomolecular Research and Therapeutics, Cell Reports and for the Israel Science Foundation.

## **PROJECTS CURRENTLY FUNDED**

- Ministero della Salute – Giovani Ricercatori 2014-2017: Pleiotropic transcriptional control mechanisms of CD49d expression in trisomy 12 chronic lymphocytic leukemia: implications for novel therapeutic approaches.
- Ministero della Salute – Giovani Ricercatori 2014-2017: MYC/miR-17~92 axis a new potential target therapy in lymphoproliferative disorders.
- AIRC 2013-2015: New approach for the treatment of B-cell disorders via anti-CD20 nanoparticles.
- Mundipharma: Development of Bendamustine-loaded anti-CD20 nanoparticles.
- Fondazione Italiana Ricerca sull'Artrite (2013-2014): Development of anti-inflammatory antibodies targeted to inflamed synovia for the treatment of rheumatoid arthritis.
- University of Trieste – Fondo di Ricerca d'Ateneo (2013-2014): Sviluppo di nuovi approcci terapeutici per il trattamento dei linfomi aggressivi.

## **COLLABORATIONS:**

### Companies

- BioTarget Inc., Chicago, IL, USA (Luis Nunez)
- LNK Chemsolutions LLC, Lincoln, NE, USA (Gustavo Larsen)
- ADIENNE Pharma & Biotech, Caponago (MI), Italy (Antonio Di Naro)
- Ephoran- Multi Imaging Solutions, Colleretto Giacosa/Ivrea (TO), Italy (Vito Lorusso)
- AcZon S.r.l, Monte San Pietro, Bologna, Italy (Alfredo Vendola)
- Transactiva S.r.l., Udine, Italy (Stefano Marchetti)

### Public research institutes:

- University of Palermo, Palermo, Italy (Claudio Tripodo)
- Centro di Riferimento Oncologico, I.R.C.C.S., Aviano (PN), Italy (Valter Gattei)
- CUCAIBA, Ministry of Health, La Plata, Buenos Aires, Argentina (Eduardo Mansilla)
- University of Bologna, Bologna Italy (Luca Prodi, Enrico Rampazzo)
- Politecnico di Milano, Milan, Italy (Davide Moscatelli)
- University Of Turi, Turin, Italy (Roberta Cavalli)
- University of Munster, Munster, Germany (Jessica Bertrand)

## PUBLICATIONS:

### Original Papers

1. Meinshausen AK, Märten N, Berth A, Färber J, Awiszus F, **Macor P**, Lohmann CH, Bertrand J. The terminal complement pathway is activated in septic but not in aseptic shoulder revision arthroplasties. *J Shoulder Elbow Surg.* 2018; S1058-2746(18)30508-1.
2. Tedesco F, Borghi MO, Gerosa M, Chighizola CB, **Macor P**, Lonati PA, Gulino A, Belmonte B, Meroni PL. Pathogenic Role of Complement in Antiphospholipid Syndrome and Therapeutic Implications. *Front Immunol.* 2018; 9:1388.
3. Durigutto P, Sblattero D, Biffi S, De Maso L, Garrovo C, Baj G, Colombo F, Fischetti F, Di Naro AF, Tedesco F, **Macor P**. Targeted Delivery of Neutralizing Anti-C5 Antibody to Renal Endothelium Prevents Complement-Dependent Tissue Damage. *Front Immunol.* 2017; 6;8:1093
4. Donato S, Pacilè S, Colombo F, Garrovo C, Monego SD, **Macor P**, Tromba G, Biffi S. Meniscal Ossicles as micro-CT Imaging Biomarker in a Rodent Model of Antigen-Induced Arthritis: a Synchrotron-Based X-ray Pilot Study. *Sci Rep.* 2017 8;7(1):7544.
5. Bittolo T, Pozzo F, Bomben R, D'Agaro T, Bravin V, Bulian P, Rossi FM, Zucchetto A, Degan M, **Macor P**, D'Arena G, Chiarenza A, Zaja F, Pozzato G, Di Raimondo F, Rossi D, Gaidano G, Del Poeta G, Gattei V, Dal Bo M. Mutations in the 3' untranslated region of NOTCH1 are associated with low CD20 expression levels chronic lymphocytic leukemia. *Haematologica.* 2017; 102(8):e305-e309.
6. Biffi S, Andolfi L, Caltagirone C, Garrovo C, Falchi AM, Lippolis V, Lorenzon A, **Macor P**, Meli V, Monduzzi M, Obiols-Rabasa M, Petrizza L, Prodi L, Rosa A, Schmidt J, Talmon Y, Murgia S. Cubosomes for in vivo fluorescence lifetime imaging. *Nanotechnology.* 2017 Feb 3;28(5):055102
7. Griggio V, Mandili G, Vitale C, Capello M, **Macor P**, Serra S, Castella B, Peola S, Foglietta M, Drandi D, Omedé P, Sblattero D, Cappello P, Chiarle R, Deaglio S, Boccadoro M, Novelli F, Massaia M, Coscia M. Humoral immune responses toward tumor-derived antigens in previously untreated patients with chronic lymphocytic leukemia. *Oncotarget.* 2017 Jan 10;8(2):3274-3288.
8. Roggenbuck D, Borghi MO, Somma V, Büttner T, Schierack P, Hanack K, Grossi C, Bodio C, **Macor P**, von Landenberg P, Boccellato F, Mahler M, Meroni PL. Antiphospholipid antibodies detected by line immunoassay differentiate among patients with antiphospholipid syndrome, with infections and asymptomatic carriers. *Arthritis Res Ther.* 2016;18(1):111.
9. Dellepiane RM, Dell'Era L, Pavesi P, **Macor P**, Giordano M, De Maso L, Pietrogrande MC, Cugno M. Invasive meningococcal disease in three siblings with hereditary deficiency of the 8(th) component of complement: evidence for the importance of an early diagnosis. *Orphanet J Rare Dis.* 2016 May 17;11(1):64.
10. Meroni PL, **Macor P**, Durigutto P, De Maso L, Gerosa M, Ferraresso M, Borghi MO, Mollnes TE, Tedesco F. Complement activation in antiphospholipid syndrome and its inhibition to prevent rethrombosis after arterial surgery. *Blood.* 2016, 127(3):365-7.
11. Capolla, S., Mezzaroba, N., Zorzet, S., Tripodo, C., Mendoza-Maldonado, R., Granzotto, M., Vita, F., Spretz, R., Larsen, G., Noriega, S., Mansilla, E., Dal Bo, M., Gattei, V., Pozzato, G., Núñez, L., **Macor, P.** A new approach for the treatment of CLL using chlorambucil/hydroxychloroquine-loaded anti-CD20 nanoparticles. *Nano Research.* 2016, 9: 537-548.
12. Petitbarat M, Durigutto P, **Macor P**, Bulla R, Palmioli A, Bernardi A, De Simoni MG, Ledee N, Chaouat G, Tedesco F. Critical Role and Therapeutic Control of the Lectin Pathway of Complement Activation in an Abortion-Prone Mouse Mating. *J Immunol.* 2015,195(12):5602-7.

13. Pozzo F, Bittolo T, Arruga F, Bulian P, **Macor P**, Tissino E, Gizdic B, Rossi FM, Bomben R, Zucchetto A, Benedetti D, Degan M, D'Arena G, Chiarenza A, Zaja F, Pozzato G, Rossi D, Gaidano G, Del Poeta G, Deaglio S, Gattei V, Dal Bo M. NOTCH1 mutations associate with low CD20 level in chronic lymphocytic leukemia: evidence for a NOTCH1 mutation-driven epigenetic dysregulation. *Leukemia*. 2016, 30(1):182-9.
14. Capolla S, Garrovo C, Zorzet S, Lorenzon A, Rampazzo E, Spretz R, Pozzato G, Núñez L, **Macor P**, Biffi S. Targeted tumor imaging of antiCD20-polymeric nanoparticles developed for the diagnosis of B-cell malignancies. *Int J Nanomed*, 2015, 10:4099-109.
15. **Macor P**, Secco E, Mezzaroba N, Zorzet S, Durigutto P, Gaiotto T, De Maso L, Biffi S, Garrovo C, Capolla S, Tripodo C, Gattei V, Marzari R, Tedesco F, Sblattero D. Bispecific antibodies targeting tumor-associated antigens and neutralizing complement regulators increase the efficacy of antibody-based immunotherapy in mice. *Leukemia*, 2015, 29(2):406-14.
16. Dereani S, **Macor P**, D Agaro T, Mezzaroba N, Dal-Bo M, Capolla S, Zucchetto A, Tissino E, Del Poeta G, Zorzet S, Gattei V, Bomben R. Potential therapeutic role of antagomiR17 for the treatment of chronic lymphocytic leukemia, *J Hematol Oncol*. 2014, 7(1):79.
17. Noris M, Galbusera M, Gastoldi S, **Macor P**, Banterla F, Bresin E, Tripodo C, Bettoni S, Donadelli R, Valoti E, Tedesco F, Amore A, Coppo R, Ruggenti P, Gotti E, Remuzzi G. Dynamics of complement activation in atypical HUS and how to monitor eculizumab therapy. *Blood*. 2014, 124(11):1715-26.
18. Agostinis C, Durigutto P, Sblattero D, Borghi MO, Grossi C, Guida F, Bulla R, **Macor P**, Meroni PL, Tedesco F. A non complement-fixing antibody to  $\beta 2$  glycoprotein I as a novel therapy to control abortions and thrombosis in antiphospholipid syndrome. *Blood*. 2014, 123(22):3478-87.
19. Mezzaroba N, Zorzet S, Secco E, Biffi S, Tripodo C, Calvaruso M, Mendoza-Maldonado R, Capolla S, Granzotto M, Spretz R, Larsen G, Noriega S, Lucafò M, Mansilla E, Garrovo C, Marín GH, Baj G, Gattei V, Pozzato G, Núñez L, **Macor P**. New Potential Therapeutic Approach for the Treatment of B-Cell Malignancies Using Chlorambucil/Hydroxychloroquine-Loaded Anti-CD20 Nanoparticles. *PLoS One*. 2013, 30;8(9):e74216.
20. Deantonio C, Cotella D, **Macor P**, Santoro C, Sblattero D. Phage display technology for human monoclonal antibodies. *Methods Mol Biol*. 2014, 1060:277-95.
21. Durigutto P\*, **Macor P\***, Ziller F, De Maso L, Fischetti F, Marzari R, Sblattero D, Tedesco F. Prevention of arthritis by locally synthesized recombinant antibody neutralizing complement component C5. *PLoS One*. 2013, 8(3):e58696.
22. **Macor P**, Durigutto P, De Maso L, Garrovo C, Biffi S, Cortini A, Fischetti F, Sblattero D, Pitzalis C, Marzari R, Tedesco F. "Treatment of arthritis models by targeting synovial endothelium with a neutralizing recombinant antibody to C5" *Arthritis Rheum*. 2012, 64(8):2559-67.
23. Boscolo S, Mion F, Licciulli M, **Macor P**, De Maso L, Brce M, Antoniou MN, Marzari R, Santoro C, Sblattero D. "Simple scale-up of recombinant antibody production using an UCOE containing vector" *N Biotechnol*. 2012, 29(4):477-84.
24. Goicoechea de Jorge E, **Macor P**, Paixão-Cavalcante D, Rose KL, Tedesco F, Cook HT, Botto M and Pickering M.C "The development of atypical haemolytic uraemic syndrome in mice is dependent on complement C5 activation" *JASN*. 2011, 22(1):137-45.

25. Marín GH, Mansilla E, Mezzaroba N, Zorzet S, Núñez L, Larsen G, Tau JM, Maceira A, Spretz R, Mertz C, Ingraio S, Tripodo C, Tedesco F, **Macor P**. “Exploratory study on the effects of biodegradable nanoparticles with drugs on malignant B cells and on a human/mouse model of Burkitt lymphoma” **Curr Clin Pharmacol**. 2010 5(4):246-50.
26. Di Bernardo A, Macor P, Guarnotta C, Franco G, Florena AM, Tedesco F, Tripodo C. Humoral immunotherapy of multiple myeloma: perspectives and perplexities. **Expert Opin Biol Ther**. 2010, 10:863-73.
27. Tripodo C\*, Florena AM\*, **Macor P\***, Di Bernardo A, Porcasi R, Guarnotta C, Ingraio S, Zerilli M, Secco E, Todaro M, Tedesco F, Franco V. “P-selectin Glycoprotein Ligand-1 as a potential target for humoral immunotherapy of multiple mieloma” **Current Cancer Drug Target**. 2009, 9:617-25.
28. Botto M, Kirschfink M, **Macor P**, Pickering MC, Würzner R, Tedesco F. “Complement in human diseases: Lessons from complement deficiencies” **Mol Immunol**. 2009, 46:2774-83.
29. Secchiero P, Chiaruttini C, Sblattero D, **Macor P**, Melloni E, Zorzet S, Tripodo C, Tedesco F, Marzari R, Zauli G. “Selection and characterization of a novel agonistic human recombinant anti-TRAIL-R2 minibody with anti-leukemic/lymphoma activity”, **Int J Immunopathol Pharmacol**. 2009, 22:73-83.
30. Bossi F, Rizzi L, Bulla R, Debeus A, Tripodo C, Picotti P, Betto E, **Macor P**, Pucillo C, Würzner R, Tedesco F. “C7 is expressed on endothelial cells as a trap for the assembling terminal complement complex and may exert anti-inflammatory function” **Blood**. 2009, 113:3640-8.
31. Biffi S, Garrovo C, **Macor P**, Tripodo C, Zorzet S, Secco E, Tedesco F, Lorusso V. “In vivo biodistribution and lifetime analysis of cy5.5-conjugated rituximab in mice bearing lymphoid tumor xenograft using time-domain near-infrared optical imaging” **Mol Imaging**. 2008, 76:272-82.
32. Ferraresso M, **Macor P**, Valente M, Della Barbera M, D'Amelio F, Borghi O, Raschi E, Durigutto P, Meroni P, Tedesco F. “Posttransplant ischemia-reperfusion injury in transplanted heart is prevented by a minibody to the fifth component of complement” **Transplantation**. 2008, 86:1445-51.
33. **Macor P**, Secco E, Zorzet S, Tripodo C, Celeghini C, Tedesco F. “An update on the xenograft and mouse models suitable for investigating new therapeutic compounds for the treatment of B-cell malignancies.” **Curr Pharm Des**. 2008, 21:2023-39.
34. Pickering MC, **Macor P**, Fish J, Durigutto P, Bossi F, Petry F, Botto M, Tedesco F. “Complement C1q and C8beta deficiency in an individual with recurrent bacterial meningitis and adult-onset systemic lupus erythematosus-like illness.” **Rheumatology**. 2008, 10:1588-9
35. **Macor P**, Tripodo C, Zorzet S, Piovan E, Bossi F, Marzari R, Amadori A, Tedesco F. “In vivo targeting of human neutralizing antibodies against CD55 and CD59 to lymphoma cells increases the antitumor activity of rituximab.” **Cancer Res**. 2007, 67:10556-63.
36. **Macor P**, Tedesco F. “Complement as effector system in cancer immunotherapy.” **Immunol Lett**. 2007, 111:6-13.
37. Fischetti F, Durigutto P, **Macor P**, Marzari R, Carretta R, Tedesco F. “Selective therapeutic control of C5a and the terminal complement complex by anti-C5 single-chain Fv in an experimental model of antigen-induced arthritis in rats.” **Arthritis Rheum**. 2007, 56:1187-97.

38. **Macor P.**, D. Mezzanzanica, C. Cossetti, P. Alberti, M. Figini, S. Canevari, F. Tedesco. "Complement activation by chimeric anti-Folate Receptor antibodies is an efficient effector system to control ovarian carcinoma" *Cancer Res.* 2006, 66:3876-83.
39. Fischetti F., Durigutto P., Pellis V., Debeus A., **Macor P.**, Bulla R., Bossi F., Ziller F., Sblattero D., Meroni P.L. and Tedesco F. "Thrombus formation induced by antibodies to b2-glycoprotein I is Complement-dependent and requires a priming factor" *Blood.* 2005. 106:2340-6.
40. Ziller F., **Macor P.**, Bulla R., Sblattero D., Marzari R. and Tedesco F., "Neutralizing human monoclonal antibodies to Complement Regulatory Proteins CD55 and CD59 for controlling Complement resistance in cancer", *Eur J Immunol.* 2005, 35:2175-83.
41. Marzari R., D. Sblattero, **P. Macor**, F. Fischetti, R. Gennaro, J.D. Marks, A. Bradbury and F. Tedesco, "The cleavage site of C5 from man and animals as a common target for neutralizing human monoclonal antibodies: in vitro and in vivo studies" *Eur J Immunol.* 2002, 32: 2773-2782.
42. Langeggen, Berge, **Macor**, Fischetti, Tedesco, Hetland. Berg, Johnson, "Detection of mRNA for the terminal complement components C5, C6, C8 and C9 in human umbelical vein endothelial cells in vitro" *AMPIS.* 2001, 109: 73-8.

Book chapter:

Eduardo Mansilla, Gustavo H. Marin, Luis Núñez, Gustavo Larsen, Nelly Mezzaroba and **Paolo Macor**. Present and Future Application of Nanoparticle Based Therapies in B-Chronic Lymphocytic Leukemia (B-CLL) Pag 431-462 in CHRONIC LYMPHOCYTIC LEUKEMIA Edited by Pablo Oppezzo, InTech, 2012.