CURRICULUM VITAE

Dr. BARBARA ROSSI, PhD

EDUCATION AND POSITIONS

1990. Certificate of "Tecnico di Laboratorio Chimico e Biologico" at the school "Primo Mazzolari", Mantua, Italy.

1997. Master's in Biology at the University of Bologna, Italy. Thesis title: "Purification of CD34 positive hematopoietic progenitor cells by avidin-biotin absorption technique".

2002. Residency in "Biochemistry and Clinical Chemistry" at the University of Verona, Italy. Thesis title: "Study on migration capacity through the blood brain barrier of CD4 and CD8 positive lymphocytes obtained from multiple sclerosis patients"

2006. PhD in "Molecular and Cellular Biology and Pathology" at the University of Verona, Italy. Thesis title: "Role of P-selectin Glycoprotein Ligand-1 in the control of brain autoimmunity".

1997-1999. Research activity on stem cells transplantation at the Section of Hematology at the University of Verona, Italy.

2000-2001. Scholarship holder, Research & Innovation Company, Padua, Italy. Field of studies: "Characterization of signaling transduction controlling integrin activation involved in lymphocyte migration into the brain during multiple sclerosis" performed at the Department of Pathology, General Pathology Section, University of Verona, Italy.

2003-2010. Research scholarship holder at the Department of Pathology, General Pathology Section at the University of Verona, Italy. Field of studies: "Molecular mechanisms controlling lymphocytes recruitment in the brain inflamed vessels".

2003-2010. Research scholarship holder at the Department of Pathology, General Pathology Section at the University of Verona, Italy. Field of studies: "Molecular mechanisms controlling lymphocytes recruitment in the brain inflamed vessels".

2011-2015. Assistant Professor of Pathology, tenure position in the Department of Pathology and Diagnostics at the University of Verona, Italy.

2015-present. Assistant Professor of Pathology, tenure position in the Department of Medicine at the University of Verona, Italy.

FELLOWSHIPS AND AWARDS

2005. Marco Vergelli's award, Associazione Italiana in Neuroimmunologia (AINI).

2007-2009. Postdoctoral fellow at the Department of Pathology, Washington University, School of Medicine, St. Louis, MO, USA, Prof. Mark J. Miller's lab. The research studies were focused on the role of T regulatory cells in the tolerance induction during autoimmune diseases.

TEACHING ACTIVITIES

2016-present. Professor of General Pathology and Immunology, Bachelor's degree in Nursing, School of Medicine and Surgery at the University of Verona, Italy.

2024-present. Professor of General Pathology, Master's degree in Medicine and Surgery, School of Medicine and Surgery at the University of Verona, Italy.

2024-present. Professor of General Pathology and Tumor Pathogenesis, Bachelor's degree in Biomedical Laboratory Techniques (Trento) (Interuniversity) at the University of Verona, Italy.

SCIENTIFIC ACTIVITIES

After graduation, Dr. Barbara Rossi carried out research activity in the Department of Hematology of Verona University, Italy. She first started to characterize the in vitro amplification of staminal CD34+ cells from human umbilical cord. Then her interest became dedicated to aspects of inflammation and she carried out studies on the mechanisms of apoptosis induction in human endothelial cells induced by inflammatory factors. Dr. Rossi studied also the intracellular cytokine pattern of different cell populations, and, particularly,

her interest was focused on cytokine profile in peripheral T lymphocytes during age-dependent maturation of the immune response (from cord blood to adulthood) and during infective diseases.

From 2000 Dr. Rossi works in the Department of Medicine, General Pathology Section at the University of Verona. Her research is focused in the neuroimmunology field. Particularly, she investigated the molecular mechanisms in the leucocyte trafficking into the central nervous system in several animal models of inflammatory diseases. She also collaborated in projects studying the mechanisms of stem cell delivery into the dystrophic muscle and in the inflamed brain in mice with experimental autoimmune encephalomyelitis, the animal model of multiple sclerosis. Following her research career and her interests in the pathogenesis of autoimmune-diseases, Dr. Rossi spent two years in Prof. Mark J. Miller's lab in the Department of Pathology at the School of Medicine of Washington University. She started an ambitious project focused on the mechanisms involved in the induction of tolerance in peripheral lymph nodes during autoimmune reactions.

Actually Dr. Rossi is involved in projects aimed to investigate different signal transduction pathways involved in the integrin activation during leucocyte homing into the secondary organs and in course of tissue inflammation.

As neuroimmunologist Dr. Rossi is also presently investigating leucocyte trafficking into the central nervous system in different experimental models neurological disorders focusing her interest to multiple sclerosis disease and Alzheimer’s disease in order to identify new molecular targets for new potential therapeutic approaches for diseases in which inflammation plays a detrimental role.

PUBBLICATIONS

1) Transplantation potential of peripheral whole blood primed by VACOP-B chemotherapy plus filgramstim (r-metHuG-CSF) in patients with aggressive non-Hodgkin's lymphoma.

A. Corato, A. Ambrosetti, **B. Rossi**, C. Vincenzi, A. Lambiase, G. Perona, G. Pizzolo, E. De Wynter, and G. Nadali.

J. Hematother. Stem Cell Res. 9: 673-682, 2000.

2) Intraarterial injection of muscle-derived CD34+ SCA-1+ stem cells restore dystrophin in mdx mouse.

Y. Torrente, J.P. Tremblay, F. Pisati, M. Belicchi, **B. Rossi**, M. Sironi, G. Constantin, M. El Fhaime, M.G. D'Angelo, N. Caron, D. Paulin, G. Scarlato and N. Bresolin.
J. Cell Biology, 152(2):335-48, 2001.

3) Molecular mechanisms involved in lymphocyte recruitment in brain microcirculation: critical roles for PSGL-1 and trimeric G-alphai linked receptors.
Piccio L., **Rossi B**., Scarpini E., Giagulli C, Laudanna C., Issekutz A., Vestweber D., Butcher E., Constantin G.
J. Immunol., 168(4):1940-1949, 2002.

4) CD8+ lymphocytes from acute multiple sclerosis patients display selective increased of adesiveness in brain venules: a critical role for P-selectin-glycoprotein ligand-1.
Battistini L., Piccio L., **Rossi B**., Bach S., Galgani S., Gasperini C., Ottoboni L., Ciabini D., Caramia D., Bernardi G., Laudanna C., Scarpini E., Borsellino G. and Constantin G.
Blood, 101(12):4775-82, 2003.

5) Identification of a putative pathway for the muscle homing of the stem cells in a muscular dystrophy model.
Torrente Y., G. Camirand, F. Pisati, M. Belicchi, **B. Rossi**, F. Colombo, M. El Fahime, N. J. Caron, G. Constantin, J. P. Tremblay , N. Bresolin.
J. Cell. Biol., 162(3): 511-20, 2003.

6) Effect of addition of FLT-3 ligand and megakariocyte growth and development factor on hemopoieticc ells in serum-free conditions.
Rossi B, Zanolin E, Vincenzi C, Diani F, Pizzolo G, de Wynter E, Nadali G.
Stem Cells Dev., 13(4):362-71, 2004.

7) Integration and independent acquisition of specialized skin- versus gut-homing and Th1 versus Th2 cytokine synthesis phenotypes in human CD4+ T cells.
Colantonio L., **Rossi B**., Constantin G., D'Ambrosio D.
Eur. J. Immunol., 34(9):2419-29, 2004.

8) A stochastic process algebra approach to simulation of autoreactive lymphocytes recruitment.
Lecca P., Priami C., Quaglia P., **Rossi B**., Laudanna C., Constantin G.
Simulation, 80(6): 273-288, 2004.

9) Efficient recruitment of lymphocytes in inflamed brain venules requires expression of Cutaneous Lymphocyte Antigen (CLA) and fucosyltransferase-VII.
Piccio L, **Rossi B**., Colantonio L., Grenningloh R., Gho A., Ottoboni L., Hommeister J., Scarpini E., Martinello M., Laudanna C., D'Ambrosio D., Lowe J.B. and Constantin G.

J. Immunol., 174(9):5805-13, 2005.

10) Neurosphere-derived multipotent precursors promote long-lasting neuroprotection by an immunomodulatory mechanism.

Pluchino S, Zanotti L, **Rossi B**, Brambilla E, Ottoboni L, Salani G, Martinello M, Cattalini A, Bergami A, Furlan R, Comi G, Constantin G and Martino G.

Nature, 436(7048):266-71, 2005.

11) The Src family kinases Hck and Fgr are dispensable for inside-out, chemoattractant-induced signaling regulating 2 integrin affinity and valency in neutrophils, but are required for 2 integrin-mediated outside-in signaling involved in sustained adhesion.

Giagulli C, Ottoboni L, Caveggion E, Lowell C, **Rossi B**, Constantin G, Laudanna C, Berton G.

J. Immunol., 177(1):604-11, 2006.

12) Complete repair of dystrophic skeletal muscle by mesoangioblasts with enhanced migration ability.

Galvez BG, Sampaolesi M, Brunelli S, Covarello D, Gavina M, **Rossi B**, Constantin G, Torrente Y, Cossu G.

J Cell Biol., 174(2):231-43, 2006.

13) VCAM-1 expression on dystrophic muscle vessels has a critical role in the recruitment of human blood-derived CD133+ stem cells after intra-arterial transplantation.

Gavina M, Belicchi M, **Rossi B**, Ottoboni L, Colombo F, Meregalli M, Battistelli M, Forzenigo L, Biondetti P, Pisati F, Parolini D, Farini A, Issekutz AC, Bresolin N, Rustichelli F, Constantin G, Torrente Y.

Blood, 108(8):2857-66, 2006.

14) Anti-Selectin Therapy for the Treatment of Inflammatory Diseases.

Rossi B and Constantin G.

Inflamm. Allergy Drug Targets., 7(2):85-93, 2008.

15) A role for leukocyte-endothelial adhesion mechanisms in epilepsy.

Fabene PF, Navarro MG, Martinello M, **Rossi B**, Merigo F, Ottoboni L, Bach S, Angiari S, Benati D, Chakir A, Zanetti L, Schio F, Osculati A, Marzola P, Nicolato E, Homeister JW, Xia L, Lowe JB, McEver RP, Osculati F, Sbarbati A, Butcher EC, & Constantin G.

Nat Med., 14(12):1377-83, 2008.

16) Regulation of conformer-specific activation of the integrin LFA-1 by a chemokine-triggered Rho signaling module.

Bolomini-Vittori M, Montresor A, Giagulli C, Staunton D, **Rossi B**, Martinello M, Constantin G, Laudanna C.
Nat. Immunol., 10(2):185-94, 2009.
17) Adipose-derived mesenchymal stem cells ameliorate chronic experimental autoimmune encephalomyelitis.
Constantin G, Marconi S, **Rossi B**, Angari S, Calderan L, Anghileri E, Gini B, Bach S, Martinella M, Bifari F, Galiè M, Turano E, Budui S, Sbarbati A, Krampera M, Bonetti B.
Stem Cells., 27(10):2624-35, 2009.
18) Binding to P-selectin and regulation of leukocyte recruitment by the long pentraxin PTX3, a key component of humoral innate immunity.
Deban L, Russo CL, Sironi M, Moalli F, Scanziani M, Zimbelli V, Cuccovillo I, Bastone A, Gobbi M, Valentino S, Doni A, Garlanda C, Danese S, Salvatori G, Sassano M, Evangelista V, **Rossi B**, Zenaro E, Constantin G, Laudanna C, Bottazzi B and Mantovani A.
Nat. Immunol., 11(4):328-34, 2010.
19) Histamine regulates autoreactive T cell activation and adhesiveness in inflamed brain microcirculation.
Lapilla M, Gallo B, Martinello M, Procaccini C, Costanza M, Musio S, **Rossi B**, Angiari S, Farina C, SteinmanL, Matarese G, Constantin G, and Pedotti R.
J. Leukoc. Biol., 89(2):259-67, 2011.
20) Vascular inflammation in central nervous system diseases: adhesion receptors controlling leukocyte-endothelial interactions.
Rossi B., Angiari S., Zenaro E., Budui S.L. and Constantin G.
J. Leukoc. Biol., 89(4):539-56, 2011.
21) Inverse agonism of cannabinoid CB1 receptor blocks the adhesion of encephalitogenic T cells in inflamed brain venules by a protein kinase A-dependent mechanism.
Rossi B, Zenaro E, Angiari S, Ottoboni L, Bach S, Piccio L, Pietronigro EC, Scarpini E, Fusco M, Leon A, Constantin G.
J. Neuroimmunol., 233(1-2):97-105, 2011.
22) Multicolor core/shell silica nanoparticles for in vivo and ex vivo imaging.
Rampazzo E, Boschi F, Bonacchi S, Juris R, Montalti M, Zaccheroni N, Prodi L, Calderan L, **Rossi B**, Becchi S, Sbarbati A.
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23) Fam65b is a new transcriptional target of FOXO1 that regulates RhoA signaling for T lymphocyte migration.

Rougerie P, Largeteau Q, Megrelis L, Carrette F, Lejeune T, Toffali L, **Rossi B**, Zeghouf M, Cherfils J, Constantin G, Laudanna C, Bismuth G, Mangeney M, Delon J.
J. Immunol., 190 (2):748-55, 2013.

24) Use of imaging to study leukocyte trafficking in the central nervous system.
Zenaro E, **Rossi B**, Angiari S, Constantin G.
Immunol. Cell. Biol., 91(4):271-80, 2013.

25) Small-animal radionuclide luminescence imaging of thyroid and salivary glands with Tc99m-pertechnetate.
Boschi F, Pagliazzi M, **Rossi B**, Cecchini MP, Gorgoni G, Salgarello M, Spinelli AE.
J. Biomed. Opt., 18(7):76005, 2013.

26) Regulatory T Cells Suppress the Late Phase of the Immune Response in Lymph Nodes through P-Selectin Glycoprotein Ligand-1.
Angiari S, **Rossi B**, Piccio L, Zinselmeyer BH, Budui S, Zenaro E, Della Bianca V, Bach SD, Scarpini E, Bolomini-Vittori M, Piacentino G, Dusi S, Laudanna C, Cross AH, Miller MJ, Constantin G.
J Immunol. 191(11):5489-500, 2013.

27) Jak tyrosine kinases promote hierarchical activation of Rho and Rap modules of integrin activation.
Montresor A, Bolomini-Vittori M, Toffali L, **Rossi B**, Constantin G, Laudanna C.
J. Cell. Biol., 203(6):1003-19, 2013.

28) TIM-1 glycoprotein binds the adhesion receptor P-selectin and mediates T cell trafficking during inflammation and autoimmunity.
Angiari S, Donnarumma T, **Rossi B**, Dusi S, Pietronigro E, Zenaro E, Della Bianca V, Toffali L, Piacentino G, Budui S, Rennert P, Xiao S, Laudanna C, Casasnovas JM, Kuchroo VK, Constantin G.
Immunity, 40(4):542-53, 2014.

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30) Mutations of Cystic Fibrosis Transmembrane Conductance Regulator Gene Cause a Monocyte-Selective Adhesion Deficiency.

Sorio C, Montresor A, Bolomini-Vittori M, Caldrer S, **Rossi B**, Dusi S, Angiari S, Johansson J, Vezzalini M, Leal T, Calcaterra E, Assael BM, Melotti P, Laudanna C.
Am. J. Respir. Crit. Care Med., 193(10):1123-33, 2016.

31) Live Imaging of Immune Responses in Experimental Models of Multiple Sclerosis.
Rossi B, Constantin G.
Front Immunol., 7:506, 2016.

32) Blockade of α4 integrins reduces leukocyte-endothelial interactions in cerebral vessels and improves memory in a mouse model of Alzheimer's disease.
Pietronigro E, Zenaro E, Bianca VD, Dusi S, Terrabuio E, Iannoto G, Slanzi A, Ghasemi S, Nagarajan R, Piacentino G, Tosadori G, **Rossi B**, Constantin G.
Sci Rep. 9(1):12055, 2019.

33) LFA-1 Controls Th1 and Th17 Motility Behavior in the Inflamed Central Nervous System.
Dusi S, Angiari S, Pietronigro EC, Lopez N, Angelini G, Zenaro E, Della Bianca V, Tosadori G, Paris F, Amoruso A, Carlucci T, Constantin G, **Rossi B**.
Front Immunol. 10:2436, 2019.

34) The emerging role of neutrophils in neurodegeneration.
Rossi B, Constantin G, Zenaro E.
Immunobiology. 225(1):151865, 2020.

35) In vitro Models of Neurodegenerative Diseases.
Slanzi A, Iannoto G, **Rossi B**, Zenaro E, Constantin G.
Front Cell Dev Biol. 8:328 2020.

36) Common Peripheral Immunity Mechanisms in Multiple Sclerosis and Alzheimer's Disease.
Rossi B, Santos-Lima B, Terrabuio E, Zenaro E, Constantin G.
Front Immunol. 12:639369, 2021.

37) The interplay between T helper cells and brain barriers in the pathogenesis of multiple sclerosis.
Angelini G, Bani A, Constantin G, **Rossi B**.
Front Cell Neurosci. 17:1101379, 2023.

38) Alpha4 beta7 integrin controls Th17 cell trafficking in the spinal cord leptomeninges during experimental autoimmune encephalomyelitis.
Rossi B, Dusi S, Angelini G, Bani A, Lopez N, Della Bianca V, Pietronigro EC, Zenaro E, Zocco C, Constantin G.

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39) An isoform of the giant protein titin is a master regulator of human T lymphocyte trafficking.

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Cell Rep. 42:112516, 2023.

40) Extracellular vesicles from adipose mesenchymal stem cells target inflamed lymph nodes in experimental autoimmune encephalomyelitis.

Turano E, Scambi I, Bonafede R, Dusi S, Angelini G, Lopez N, Marostica G, **Rossi B**, Furlan R, Constantin G, Mariotti R, Bonetti B.

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41) Expression of the membrane tetraspanin claudin 18 on cancer cells promotes T lymphocyte infiltration and antitumor immunity in pancreatic cancer.

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Immunity. 57:1378-1393.e14, 2024.

42) Coenzyme A fueling with pantethine limits autoreactive T cell pathogenicity in experimental neuroinflammation

Angiari S, CarlucciT, Budui SL, Bach SD, Dusi S, Walter J, Ellmeier E, Schnabl A, Stracke A, Bordag N, Tafrali C, Demjaha R, Khalil M, Angelini G, Terrabuio E, Pietronigro EC, Zenaro E, Laudanna C, **Rossi B**, Constantin G.

J. Neuroinflam. 21:287, 2024.

43) Intranasal administration of extracellular vesicles derived from adipose mesenchymal stem cells has therapeutic effect in experimental autoimmune encephalomyelitis

Rossi B, Virla F, Angelini G, Scambi I, Bani A, Marostica G, Caprioli M, Anni D, Furlan R, Marzola P, Mariotti R, Constantin G, Bonetti B and Turano E.

Cells. 14, 1172, 2025.

44) CD103-CD8+ T cells promote neurotoxic inflammation in Alzheimer's disease via granzyme K-PAR-1 signaling

Terrabuio E, Pietronigro EC, Bani A, Della Bianca V, Laudanna C, **Rossi B**, Finotti G, Santos-Lima B, Zenaro E, Turano E, Tosadori G, Calgaro M, Vitulo N, Castellucci M, Cecconi D, Brandi J, Vareltzakis N, Mainieri F, Calore A, Angelini G, Bonetti B, Constantin G.
Nat Commun. 16:8372, 2025.

CHAPTER BOOKS

1) Carnini C., Constantin G., **Rossi B**., De Curtis M., Folco G.
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Adv Exp Med Biol. 525:35-8, 2003.

2) Constantin, G.; **Rossi, B.**
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