

CURRICULUM VITAE

Name: **Silvano Sozzani**
Birth Place and Date: Turin, Italy, December 10, 1959
Nationality: Italian
Marital Status: Married, two children
Language: Italian, English
Current Position: Professor of General Pathology, University of Brescia

Education and Training:

- Doctor in Pharmacy, University of Pavia, Pavia, Italy, 1983 (110/110)
- PhD in Pharmacology and Immunology, Istituto 'Mario Negri', Milan, Italy, 1986
- Visiting Scientist, Department of Pathology, McMaster University, Hamilton, ON, Canada, 1986
- Research Associate, Department of Biochemistry, Bowman Gray School of Medicine, Winston-Salem, NC, U.S.A., 1988-1990
- Adjunct Assistant Professor, Dept. of Biochemistry, Bowman Gray Sch. of Med., 1990-1997
- Research Assistant, Laboratory of Immunology, Istituto 'Mario Negri', 1990-1994
- Visiting Scientist, Department of Medicine, Duke University, Durham, NC, USA, 1997

Working Experience:

- Head Signal Transduction Unit, Dept. of Immunology and Cellular Biology, Istituto 'Mario Negri', 1995-1997
- Head Inflammation and Signal Transduction Laboratory, Istituto 'Mario Negri', 1997-2005
- Associate Professor of General Pathology, University of Brescia, 2001-2011
- Full Professor of General Pathology, University of Brescia, since 2011
- Director Dept Molecular and Translational Medicine, University of Brescia, since 2012

Scientific Responsibilities

- 2000 Secretary Italian Society of Immunology
- 2001-2008 Secretary Italian Society of Immunology, Clinical Immunology and Allergology
- 2003-2007 Associate Editor *The Journal of Immunology*
- 2007-2013 President European Cytokine Society
- 2008- Associate Editor *European Cytokine Network*
- 2011-2014 President European Macrophage Dendritic Cell Society
- 2011-2016 Member of the Executive Board *The European Journal of Immunology*
- 2016-present Chief Editor, *Frontiers in Cytokines and Soluble Mediators in Immunity*

Honors:

- 1987 Fellow of the Italian Association for Cancer Research (AIRC)
- 1988 Fellow of Champion Industries, North Carolina, USA
- 1990 Fellow of the Italian Association for Cancer Research (AIRC)
- 1992 Italian Society of Cancerology Award
- 1994 International Cytokine Society Young Investigator Award
- 1997 Fellow “Liliana Momigliano Sacerdote, Martha Galle”
- 2014 “Onorificenza al Merito della Repubblica Italiana” (Commendatore) for scientific contribution by the President of the Republic of Italy

Member of the Editorial Board: Current Immunology Reviews; Current Microbiology Reviews; Cytokines, International Immunopharmacology; The Open Immunology Journal; International Journal of Immunopathology and Pharmacology, Journal of Immunology and Regenerative Medicine; Immunobiology

Society Memberships: Società Italiana Immunologia, Immunologia Clinica e Allergologia (SIICA), American Society of Immunology (AAI); International Cytokine Society (ICS); European Cytokine Society (ECN), Henry Kunkel Society, Gruppo 2003.

Research Interests: Regulation of innate immune responses. Signal transduction of chemotactic receptors with special regard to phospholipid metabolism. Chemokines and their role in pathology. Biology of dendritic cells. Role of Dendritic cells in autoimmune diseases.

Scientific productivity: more than 270 publications; more than 31,000 citations; *h*-index= 88 (Scopus).

Selected Publications (from more than 270)

1. Sozzani S., Luini W., Molino M., Jilek P., Bottazzi B., Cerletti C., Matsushima K., And Mantovani A. The signal transduction pathway involved in the migration induced by a monocyte chemotactic cytokine. *J. Immunol.*, 147, 2215-2221, 1991.

2. Sozzani S., Agwu D., McCall C.E., O'flaherty J.T., Schmitt J.D., Kent J.D., and Mcphail L.C. Propranolol, a phosphatidate phosphohydrolase inhibitor, also inhibits protein kinase C. *J. Biol. Chem.*, 267, 20481-20488, 1992.

3. Locati M., Zhou D., Luini W., Evangelista V., Mantovani A., and **Sozzani S.** Rapid induction of arachidonic acid release by monocyte chemotactic protein-1 and related chemokines. Role of Ca²⁺ influx, synergism with platelet activating factor and significance for chemotaxis. *J. Biol. Chem.*, 269, 4746-4753, 1994.

4. Sozzani S., Agwu D.E., Ellenburg M.D., Locati M., Rieppi M., Rojas A., Mantovani A., and L.C. Mcphail. Activation of phospholipase D by interleukin 8 in human neutrophils. *Blood*, 84, 3895-3901, 1994.

5. **Sozzani S.**, Sallusto F., Luini W., Zhou D., Piemonti L., Allavena P., Van Damme J., Valitutti S., Lanzavecchia A., and A. Mantovani. Migration of dendritic cells in response to formyl peptides, C5a, and a distinct set of chemokines. *J. Immunol.*, 155, 3292-3295, 1995.
6. Zhou D., Luini W., Bernasconi S., Diomede L., Salmona M., Mantovani A. and **Sozzani S.**, Phosphatidic acid and lysophosphatidic acid induce haptotactic migration of human monocytes. *J. Biol. Chem.*, 270, 25549-25556, 1995.
7. Locati M., Lamorte G., Luini W., Introna M., Bernasconi S., Mantovani A. and **S. Sozzani**. Inhibition of monocyte chemotaxis to C-C chemokines by antisense oligonucleotide for cytosolic phospholipase A2. *J. Biol. Chem.*, 271, 6010-6016, 1996.
8. Barleon B., **Sozzani S.**, Zhou D., Weich H.A., Mantovani A., and D. Marme'. Migration of human monocytes in response to vascular endothelial growth factor (VEGF) is mediated via the VEGF receptor flt-1. *Blood*, 87, 3336-3343, 1996.
9. Godiska R., Chantry D., Raport C.J., **Sozzani S.**, Allavena P., Levite, D., Mantovani A. and P.W. Gray. Human macrophage derived chemokine (MDC) a novel chemoattractant for monocyte, monocyte derived dendritic cells, and natural killer cells. *J. Exp. Med.*, 185, 1595-1604, 1997.
10. Power C.A., Church D.J., Meyer A., Alouani S., Proudfoot A.E.I., Clark-Lewis I, **Sozzani S.**, Mantovani A., and T.N.C. Wells. Cloning and Characterization of a specific receptor for the novel CC chemokine MIP-3 α from lung dendritic cells. *J. Exp. Med.*, 186, 825-835, 1997.
11. Bonecchi R., Bianchi G., Panina Bordignon P., D'ambrosio D., Lang R., Borsatti A., **Sozzani S.**, Allavena P., Gray P., Mantovani A., and S. Sinigaglia. Differential expression of chemokine receptors and chemotactic responsiveness of Th1 and Th2 cells. *J. Exp. Med.*, 187, 129-134, 1998.
12. **Sozzani S.**, Ghezzi S., Iannolo G., Luini W., Borsatti A., Polentarutti N., Sica A., Locati M., Mackay C., Wells T.N.C., Biswas P., Vicenzi E., Poli G., and A. Mantovani. Interleukin-10 increases CCR5 expression and HIV infection in human monocytes. *J. Exp. Med.*, 187, 439-444, 1998.
13. Ali H., **Sozzani S.**, Fisher I., Barr A.J., Richardson R.M., Haribabu B. and R. Snyderman. Differential regulation of formyl peptide and platelet-activating factor receptors. Role of phospholipase C β phosphorylation by protein kinase A. *J. Biol. Chem.* 273, 11012-11016, 1998.
14. **Sozzani S.**, Allavena P., D'amico G., Luini W., Bianchi G., Kataura M., Imai T., Yoshie O., Bonecchi R. and A. Mantovani. Cutting Edge: Differential regulation of chemokine receptors during dendritic cell maturation: a model for their trafficking properties. *J. Immunol.*, 161, 1083-1086, 1998.
15. **Sozzani S.**, Luini W., Bianchi G., Allavena P., Wells T.N.C., Napolitano M., Bernardini G., Vecchi A., D'ambrosio D., Mazzeo D., Sinigaglia F., Santoni A., Maggi E., Romagnani S. and A. Mantovani. The viral chemokine macrophage inflammatory protein-II is a selective Th2 chemoattractant. *Blood*, 92, 4036-4039, 1998.
16. Bonecchi R., Polentarutti N., Luini W., Borsatti A., Bernasconi S., Locati M., Power C.A., Proudfoot A., Wells T.N.C., Mackay C., Mantovani A. and **S. Sozzani**. Up-regulation of CCR1 and CCR3 and induction of chemotaxis to CC chemokines by IFN- γ in human neutrophils. *J. Immunol.*, 162, 474-479, 1998.

17. Hirsch E., Katanaev V.L., Garlanda C., Azzolino O., Pirola P., Silengo L., **Sozzani S.**, Mantovani A., Altruda F. and Wymann M.P. Central role for the G protein-coupled Phosphoinositide-3 Kinase in inflammation, *Science*, 287, 1049-1053, 2000.
18. Bonecchi R., Facchetti F., Dusi S., Luini W., Lissandrini D., Simmelink M., Locati M., Bernasconi S., Allavena P., Brandt E., Rossi F., Mantovani A. and **S. Sozzani**. Induction of functional IL-8 receptors by IL-4 and IL-13 in human monocytes. *J. Immunol.*, 164, 3862-3869, 2000.
19. D'Amico G, Bianchi G, Frascaroli G, Doni A, Transidico P, Vecchi A, **Sozzani S**, Allavena P and Mantovani A Freezing and uncoupling of inflammatory chemokine receptors by interleukin 10: Generation of functional decoys, *Nature Immunol.*, 1, 387-391, 2000.
20. Penna G, **Sozzani S**, and L Adorini Selective usage of chemokine receptors by plasmacytoid dendritic cells *J Immunol* , 167, 1862-1866, 2001
21. Allavena P, Badolato R, Facchetti F, Vermi W, Paganin C, Luini W, Giuliani S, Mazza C, Bolzern U, Chiesa I, Notarangelo L, Mantovani A and **Sozzani S**. Monocytes from Wiskott-Aldrich patients differentiate in functional mature dendritic cells with a defect in CD83 expression. *Eur J Immunol.* 31, 3413-3421, 2001
22. Leoni F, Zaliani A, Bertolini G, Porro G, Pagani P, Pozzi P, Dona G, Fossati G, **Sozzani S**, Azam T, Bufler P, Fantuzzi G, Goncharov I, Kim SH, Pomerantz BJ, Reznikov LL, Siegmund B, Dinarello CA, and Mascagni P. The antitumor histone deacetylase inhibitor suberoylanilide hydroxamic acid exhibits antiinflammatory properties via suppression of cytokines. *Proc Natl Acad Sci U S A.* 99, 2995-3000, 2002
23. Wittamer V, Franssen J-D, Vulcano M, Mirjolet J-F, Le Poul E, Migeotte I, Brézillon S, Tyldesley R, Blanpain C, Detheux M, Mantovani A, **Sozzani S**, Vassart G, Parmentier M and D. Communi. Specific Recruitment of Antigen-Presenting Cells by Chemerin, a Novel Processed Ligand from Human Inflammatory Fluids, *J. Exp. Med.*, 198, 977-985, 2003
24. Del Prete A, Vermi W, Dander E, Otero K, Barberis L, Luini W, Bernasconi S, Sironi M, Santoro A, Garlanda C, Facchetti F, Wymann MP, Vecchi A, Hirsch E, Mantovani A and **Sozzani S**. Defective dendritic cell migration and activation of adaptive immunity in PI3Kgamma-deficient mice. *EMBO J.* 23:3505-15, 2004.
25. Riboldi E, Musso T, Moroni E, Urbinati C, Bernasconi S, Rusnati M, Adorini L, Presta M and **Sozzani S**. Cutting edge: proangiogenic properties of alternatively activated dendritic cells. *J Immunol.* 175:2788-92, 2005.
26. Vermi W, Riboldi E, Wittamer V, Gentili F, Luini W, Marrelli S, Vecchi A, Franssen JD, Communi D, Massardi L, Sironi M, Mantovani A, Parmentier M, Facchetti F and **Sozzani S**. Role of ChemR23 in directing the migration of myeloid and plasmacytoid dendritic cells to lymphoid organs and inflamed skin. *J Exp Med.* 201:509-15, 2005.
27. Scotton CJ, Martinez FO, Smelt MJ, Sironi M, Locati M, Mantovani A and **Sozzani S**. Transcriptional profiling reveals complex regulation of the monocyte IL-1 beta system by IL-13. *J Immunol.* 174:834-45, 2005.

28. Migeotte I, Riboldi E, Franssen JD, Gregoire F, Loison C, Wittamer V, Detheux M, Robberecht P, Costagliola S, Vassart G, **Sozzani S**, Parmentier M and Communi D. Identification and characterization of an endogenous chemotactic ligand specific for FPRL2. *J Exp Med*. 201:83-93, 2005.
29. **Sozzani S**. Dendritic cell trafficking: More than just chemokines. *Cytokine Growth Factor Rev*. 16:581-592 2005
30. Parolini S, Santoro A, Marcenaro E, Luini W, Massardi L, Facchetti F, Communi D, Parmentier M, Majorana A, Sironi M, Tabellini G, Moretta A and **Sozzani S**. The role of chemerin in the colocalization of NK and dendritic cell subsets into inflamed tissues. *Blood*. 2007, 109:3625-32.
31. **Sozzani S**, Rusnati M, Riboldi E, Mitola S and Presta M. Dendritic cell-endothelial cell cross-talk in angiogenesis. *Trends Immunol*. 2007, 28:385-92.
32. Salogni L, Musso T, Bosisio D, Miolo M, Jala VR, Haribabu B, Locati M, **Sozzani S**. Activin A induces dendritic cell migration through the polarized release of CXC chemokine ligands 12 and 14. *Blood*. 2009, 113:5848-56.
33. Albanesi C, Scarponi C, Pallotta S, Daniele R, Bosisio D, Madonna S, Fortugno P, Gonzalvo-Feo S, Franssen JD, Parmentier M, De Pità O, Girolomoni G, **Sozzani S**. Chemerin expression marks early psoriatic skin lesions and correlates with plasmacytoid dendritic cell recruitment. *J Exp Med*. 2009, 206:249-58.
34. **Sozzani S**, Vermi W, Del Prete A, Facchetti F. Trafficking properties of plasmacytoid dendritic cells in health and disease. *Trends Immunol*. 2010, 31:270-7.
35. Ziegler-Heitbrock L, Ancuta P, Crowe S, Dalod M, Grau V, Hart DN, Leenen PJ, Liu YJ, Macpherson G, Randolph GJ, Scherberich J, Schmitz J, Shortman K, **Sozzani S**, Strobl H, Zembala M, Austyn JM, Lutz MB. Nomenclature of monocytes and dendritic cells in blood. *Blood*. 2010, 116:e74-80.
36. Otero K, Vecchi A, Hirsch E, Kearley J, Vermi W, Del Prete A, Gonzalvo-Feo S, Garlanda C, Azzolino O, Salogni L, Lloyd CM, Facchetti F, Mantovani A, **Sozzani S**. Non-redundant role of CCRL2 in lung dendritic cell trafficking. *Blood*. 2010, 116:2942-9.
37. Riboldi E, Daniele R, Parola C, Inforzato A, Arnold PL, Bosisio D, Fremont DH, Bastone A, Colonna M, **Sozzani S**. Human C-type lectin domain family 4, member C (CLEC4C/BDCA-2/CD303) is a receptor for asialo-galactosyl-oligosaccharides. *J Biol Chem*. 2011, 286:35329-33.
38. Raccosta L, Fontana R, Maggioni D, Lanterna C, Villablanca EJ, Paniccia A, Musumeci A, Chiricozzi E, Trincavelli ML, Daniele S, Martini C, Gustafsson JA, Doglioni C, Feo SG, Leiva A, Ciampa MG, Mauri L, Sensi C, Prinetti A, Eberini I, Mora JR, Bordignon C, Steffensen KR, Sonnino S, **Sozzani S**, Traversari C, Russo V. The oxysterol-CXCR2 axis plays a key role in the recruitment of tumor-promoting neutrophils. *J Exp Med*. 2013, 210:1711-28.
39. Del Prete A, Bonecchi R, Vecchi A, Mantovani A, **Sozzani S**. CCRL2, a fringe member of the atypical chemoattractant receptor family. *Eur J Immunol*. 2013, 43:1418-22.
40. Bachelierie F, Ben-Baruch A, Burkhardt AM, Combadiere C, Farber JM, Graham GJ, Horuk R, Sparre-Ulrich AH, Locati M, Luster AD, Mantovani A, Matsushima K, Murphy PM, Nibbs R,

Nomiyama H, Power CA, Proudfoot AE, Rosenkilde MM, Rot A, **Sozzani S**, Thelen M, Yoshie O, Zlotnik A. International Union of Pharmacology. LXXXIX. Update on the extended family of chemokine receptors and introducing a new nomenclature for atypical chemokine receptors. *Pharmacol Rev.* 2014, 66(2): 467.

41. Bachelierie F, Graham GJ, Locati M, Mantovani A, Murphy PM, Nibbs R, Rot A, **Sozzani S**, Thelen M. New nomenclature for atypical chemokine receptors. *Nat Immunol.* 2014 Mar;15(3):207-8.

42. Seeger P, Bosisio D, Parolini S, Badolato R, Gismondi A, Santoni A, **Sozzani S**. Activin A as a Mediator of NK-Dendritic Cell Functional Interactions. *J Immunol.* 2014 Feb1; 192(3):1241-8.

43. Gonzalvo-Feo S, Del Prete A, Pruenster M, Salvi V, Wang L, Sironi M, Bierschenk S, Sperandio M, Vecchi V, **Sozzani S**. Endothelial cell-derived chemerin promotes dendritic cell transmigration. *J Immunol.* 2014 Mar1;192(5):2366-73.

44. **Sozzani S**, Del Prete A, Bonecchi R, Locati M. Chemokines as effector and target molecules in vascular biology. *Cardiovasc Res.* 2015 Aug 1;107(3):364-72.

45. Seeger P, Musso T, **Sozzani S**. The TGF- β superfamily in dendritic cell biology. *Cytokine Growth Factor Rev.* 2015 Dec;26(6):647-57.

46. Mazzon C, Zanotti L, Wang L, Del Prete A, Fontana E, Salvi V, Poliani PL, **Sozzani S**. CCRL2 regulates M1/M2 polarization during EAE recovery phase. *J Leukoc Biol.* 2016 Jun;99(6):1027-33.

47. Prandini A, Salvi V, Colombo F, Moratto D, Lorenzi L, Vermi W, De Francesco MA, Notarangelo LD, Porta F, Plebani A, Facchetti F, **Sozzani S**, Badolato R. Impairment of dendritic cell functions in patients with adaptor protein-3 complex deficiency. *Blood.* 2016 Jun 30;127(26):3382-6.

48. Salvi V, Vermi W, Gianello V, Lonardi S, Gagliostro V, Naldini A, **Sozzani S**, Bosisio D. Dendritic cell-derived VEGF-A plays a role in inflammatory angiogenesis of human secondary lymphoid organs and is driven by the coordinated activation of multiple transcription factors. *Oncotarget.* 2016 Jun 28;7(26):39256-39269.

49. **Sozzani S**, Del Prete A, Bosisio D. Dendritic cell recruitment and activation in autoimmunity. *J Autoimmun.* 2017 Dec;85:126-140.

50. Del Prete A, Martínez-Muñoz L, Mazzon C, Toffali L, Sozio F, Za L, Bosisio D, Gazzurelli L, Salvi V, Tiberio L, Liberati C, Scanziani E, Vecchi A, Laudanna C, Mellado M, Mantovani A, **Sozzani S**. The atypical receptor CCRL2 is required for CXCR2-dependent neutrophil recruitment and tissue damage. *Blood.* 2017 Sep 7;130(10):1223-1234.

51. Salvi V, Vermi W, Cavani A, Lonardi S, Carbone T, Facchetti F, Bosisio D, **Sozzani S**. IL-21 May Promote Granzyme B-Dependent NK/Plasmacytoid Dendritic Cell Functional Interaction in Cutaneous Lupus Erythematosus. *J Invest Dermatol.* 2017 Jul;137(7):1493-1500.

52. Mazzotti C, Gagliostro V, Bosisio D, Del Prete A, Tiberio L, Thelen M, **Sozzani S**. The Atypical Receptor CCRL2 (C-C Chemokine Receptor-Like 2) Does Not Act As a Decoy Receptor in Endothelial Cells. *Front Immunol.* 2017 Oct 6;8:1233.

- 53.** Del Prete A, Schioppa T, Tiberio L, Stabile H, Sozzani S. Leukocyte trafficking in tumor microenvironment. *Curr Opin Pharmacol*. 2017 Aug;35:40-47.
- 54.** Presta M, Sozzani S. Editorial overview: Lymphatic vessels: More than a draining pipeline. *Curr Opin Immunol*. 2018 Aug;53:vii-ix.
- 55.** Bosisio D, Ronca R, Salvi V, Presta M, Sozzani S. Dendritic cells in inflammatory angiogenesis and lymphangiogenesis. *Curr Opin Immunol*. 2018 Aug;53:180-186.
- 56.** Salvi V, Gianello V, Busatto S, Bergese P, Andreoli L, D'Oro U, Zingoni A, Tincani A, Sozzani S, Bosisio D. Exosome-delivered microRNAs promote IFN- α secretion by human plasmacytoid DCs via TLR7. *JCI Insight*. 2018 May 17;3(10).
- 57.** Tiberio L, Del Prete A, Schioppa T, Sozio F, Bosisio D, Sozzani S. Chemokine and chemotactic signals in dendritic cell migration. *Cell Mol Immunol*. 2018 Apr;15(4):346-352.
- 58.** Bosisio D, Gianello V, Salvi V, Sozzani S. Extracellular miRNAs as activators of innate immune receptors. *Cancer Lett*. 2019 Jun 28;452:59-65.
- 59.** Gianello V, Salvi V, Parola C, Moretto N, Facchinetti F, Civelli M, Villetti G, Bosisio D, Sozzani S. The PDE4 inhibitor CHF6001 modulates pro-inflammatory cytokines, chemokines and Th1- and Th17-polarizing cytokines in human dendritic cells. *Biochem Pharmacol*. 2019 May;163:371-380.