| | |
|---|---|
| **Full name** | Jalkanen (os Mehto), Sirpa Tuulikki |
| **Sex** | Female |
| **Date and place of birth** | February 28, 1954, Jyväskylä, Finland |
| **Nationality** | Finnish |
| **Family** | Married to Markku Jalkanen, 3 children |
| **Current residence** | Rauvolantie 77, 20760 Piispanristi, Finland |

**Education and degrees awarded**
M.D., University of Turku, 1979
Ph.D. University of Turku, Immunology 1983
Docent in Immunobiology, 1987

**Other education and training, qualifications and skills**
Specialist in Clinical Microbiology, 1990

**Linguistic skills**
Finnish (native), English (fluent), Swedish (moderate), German (moderate)

**Current position**
Academy Professor, 2014-
Professor of Immunology, University of Turku, 2001-

**Previous professional appointments and career breaks**
Postdoctoral fellow, Department of Pathology, Stanford University, Stanford, USA, 1983-1986
Head of Laboratory, Department of Medical Microbiology, University of Turku, 1986-1989
Junior Investigator of the Finnish Academy, 1989-1991
Senior Investigator of the Finnish Academy, 1991-1994
Senior Investigator of the National Public Health Institute, Turku, 1994-1996
Elected as the Chairman of the Department of Immunology, University of Helsinki (on leave of absence for the Academy Professorship), 1997-2001
Research Professor of the Finnish Academy, 1996-2006
Research Professor of the National Institute for Health and Welfare, Turku, 2006-

**Major research funding and academic leadership, student supervision**
*Major research funding:*
Finnish Academy (including Academy Professorships and Center of Excellences), 1989-
Finnish Cancer Foundation, 1987-
Juselius Foundation, 1988-
EU: Traumakine 2012-2018; TumAdoR 2013-2018
(others: EU, JDRF etc. in earlier years)

*Academic leadership:*
Director of the MediCity Research Laboratory (Research Unit of the Medical Faculty of Turku University consisting 22 research groups), 1996-
Director of one of the research profiling programs of BioCity Turku and the Faculty of Medicine, University of Turku, Receptor Program, 1996-
Director of the National Centers of Excellence in Cell Trafficking (2000-2005); Host Defence (2008-2013)
Vice Dean of the Medical Faculty, University of Turku, 2010-2013
Vice Chairman 2008-2010 and Chairman of the Finnish Academy of Science and Letters 2010-2012

*PhD theses supervised or co-supervised:*
Palojoki Eeva (1995), Hänninen Arno (1995), Salmi Marko (1995, now full professor), Aho Riitta (1995), Ristamäki Raija (1995), Airas Laura (1996, now full professor), Wuorela Maarit (1996), Arvilommi (Kujari) Anna-Maija (1998), Bono Petri (1998, now the chief of Helsinki University Hospital), Jaakkola Kimmo (2000), Tohka Sami (2001), Henttinen Tiina (2001), Irjala Heikki (2002, now the department head in Turku University Hospital), Jaakkola Ilkka (2003), Maula Sanna (2003), Kurkijärvi Riikka (2004), Niemelä Jussi (2006), Kiss Jan (2008), Auvinen Kaisa (2009), Laurila Juha (2010) Autio Anu (2012), Ålgars Annika (2012), Karikoski Marika (2012), Keuschnigg Johannes (2013), Palani Senthil (2016), Dunkel Johannes (2017), Virtanen Helena (2017), Hagert Cecilia (2017), Santalahti Kristiina (2018)

*Postdoctoral training:*
I have trained 25 postdoctoral fellows. Many of them are in leading positions in industry or academia. Six of them can be considered very successful in their research holding full or adjunct professorships or Department/Hospital head positions. Based on these educational achievements I have obtained a major prize in Finland, Maud Kuistila Prize.

**Merits in teaching and pedagogical competence**
Immunology teaching since 1981 to medical students

**Awards, prizes and honours**
*Prizes:*
Duodecim Society: Young Scientist Award, Finland, 1987
Eli Lilly Gastroenterology Award, 1990
Medix Award for the best Finnish paper in the biosciences in 1990
Maud Kuistila Prize for excellent work as the supervisor of young scientists, Finland, 1997
Elias Lönnrot Medal for achievements in science, teaching and developing biotechnology in Finland, 2004
Anders Jahre Prize, the major prize in Scandinavia for Medicine, 2005
Tillandz prize for the best paper in biosciences in Turku 2005
Tillandz prize for the best paper in biosciences in Turku 2006
Äyräpää Prize, the major prize in medicine in Finland, 2008

Datta Medal for outstanding achievement in the field of biochemistry and molecular biology or a related area (given by FEBS), 2011
EU Women Innovator Prize (2nd) 2016
Innovator Award, Pharma Industry Finland 2017

*Honours:*
The Rheumalecture of the year, 1994 (the Finnish Society for Rheumatologists)
Member of the Finnish Academy of Science and Letters, 1998-
EMBO member, 2000-
Member of the Norwegian Academy of Science and Letters, 2002-
Knight, First Class, of the Order of the White Rose of Finland 2005
Member of Academia Europea 2013-
Academician 2015- (currently only 13 altogether in all fields of Science in Finland)

**Other scientific or academic merits and activities**

*Evaluation/memberships:*
Frequent evaluator for Research Councils of Norway, Sweden and Belgium, EMBO, European Science Foundation
Member of ERC panel (advanced grants) 2008, 2010, 2012 and 2015
Member of the advisory board for two centers of excellence (Norway and Sweden, 2008-)
Evaluator of Göteborg University 2010, Uppsala University (2007, 2011 (chair), 2017)
Evaluator for professorships in USA, Sweden, Norway and UK
Executive Editor of the European Journal of Immunology, 2000-2010
Member of the board for the Scandinavian Journal of Immunology, 1999-

*Invited presentations at international conferences (selected out of more than 120):*
**EURESCO Conference**: B Cells in Health and Disease, Acquafredda di Maratea, Italy, 2003
**12th International Congress of Immunology**, Montreal, Canada, 2004
**Keystone Symposium**, 'Leukocyte trafficking: Cellular and Molecular Mechanisms', Taos, New Mexico, USA, 2005
**Gordon Conference**, 'Molecular Mechanisms in Lymphatic Function and Disease', Les Diablerets, Switzerland, 2006
**Keystone Symposium,** 'Leukocyte Traffciking', Keystone, Colorado, USA, 2008
**European Immunology Conference,** Berlin, Germany, 2009
**the 36th FEBS Congress**, 'Biochemistry for Tomorrow's Medicine', Torino, Italy, 2011
**Keystone Symposium. '**Chemokines and Leukocyte Trafficking in Homeostasis and Inflammation', Breckenbridge, CO, USA, 2012
**Gordon Conference**, 'Molecular Mechanisms in Lymphatic Function & Disease', Ventura, CA, USA 2012, **EMBO meeting**. Ectoenzymes as Diagnostic Targets for Inflammation and Cancer, Rehovot, Israel 2015

**Scientific and social impact of research**

Over 300 peer-reviewed publications >15 000 citations with H index 65 (Jalkanen S and Jalkanen ST, Web of Science).
Over 120 invited talks at international scientific meetings, over 10 patents or patent applications. Organizer or co-organizer of several international scientific meetings (for example 2 ESF (European Science Foundation) workshops, 3 Scandinavian Society for Immunology meetings, World Congress of Immunology, European Congress of Immunology, Keystone Meeting)

I have made several discoveries with my group. They have led to founding of two biotech companies (BioTie Therapies (recently sold to Acorda) and Faron Pharmaceuticals, both publicly traded in New York and London stock markets, respectively). I am co-founder in both of them and they are exploiting my discoveries in clinical trials.

**Positions of trust in society and other societal merits**

*Trustee positions (current):*

Member of the Board: Emil Aaltonen Foundation

Member of the Advisory Board: Sigrid Juselius Foundation

Member of the Research Board at University of Turku

Member of the Board: Foundation of the Finnish Cancer Institute

Vice Chair of the Board: Tampere University of Technology

Chair: Finnish Cancer Foundation

Chair: Emil Aaltonen Foundation

Member of the Board: Orion (the biggest pharmaceutical company in Finland)

Member of the Board: Research and Innovation Council for the Prime Minister of Finland

## SELECTED PUBLICATIONS
## A) Peer-reviewed scientific articles

Journal articles

1. Jalkanen M, Jalkanen S. Immunological detection of proteins after isoelectric focusing in thin layer agarose gel: a specific application for the characterization of immunoglobulin diversity. **J Clin Lab Immunol** 10:225-228, 1983.

2. Jalkanen S, Granfors K, Jalkanen M, Toivanen P. Immune capacity of the chicken bursectomized at 60 hr of incubation: surface immunoglobulin and B-L (La-like) antigen-bearing cells. **J Immunol** 130:2038-2041, 1983.

3. Jalkanen S, Granfors K, Jalkanen M, Toivanen P. Immune capacity of the chicken bursectomized at 60 hours of incubation: failure to produce immune, natural, and autoantibodies in spite of immunoglobulin production. **Cell Immunol** 80:363-373, 1983.

4. Eerola E, Jalkanen S, Granfors K, Toivanen A. Immune capacity of the chicken bursectomized at 60 hours of incubation: mitogen-induced cell proliferation and immunoglobulin secretion. **J Immunol** 131:120-124, 1983.

5. Jalkanen S. Immune capacity of the chicken bursectomized at 60 hours of incubation: transplantation of bone marrow cells of the bursectomized chickens into cyclophosphamide-treated newly hatched recipients. **Eur J Immunol** 13:779-785, 1983.

6. Jalkanen S, Korpela R, Granfors K, Toivanen P. Immune capacity of the chicken bursectomized at 60 hr of incubation: cytoplasmic immunoglobulins and histological findings. **Clin Immunol Immunopathol** 30:41-50, 1984.

7. Eerola E, Granfors K, Jalkanen S, Toivanen A. Immune capacity of the chicken bursectomized at 60 hr of incubation: effect of adherent cells on the production of immunoglobulins and specific antibodies *in vitro*. **Clin Immunol Immunopathol** 31:202-211, 1984.

8. Eerola E, Jalkanen S, Granfors K, Toivanen A. Immune capacity of the chicken bursectomized at 60 H of incubation. Effect of bursal epithelial cells and bursal epithelium-conditioned medium on the production of immunoglobulins and specific antibodies in vitro. **Scand J Immunol** 19:493-500, 1984.

9. Jalkanen S, Jalkanen M, Granfors K, Toivanen P. Defect in the generation of light-chain diversity in bursectomized chickens. **Nature** 311:69-71, 1984.

10. Jalkanen ST, Butcher EC. In vitro analysis of the homing properties of human lymphocytes: developmental regulation of functional receptors for high endothelial venules. **Blood** 66:577-582, 1985.

11. Navarro RF, Jalkanen ST, Hsu M, Søenderstrup-Hansen G, Goronzy J, Weyand C, Fathman CG, Clayberger C, Krensky AM, Butcher EC. Human T cell clones express functional homing receptors required for normal lymphocyte trafficking. **J Exp Med** 162:1075-1080, 1985.

12. Jalkanen S, Steere AC, Fox RI, Butcher EC. A distinct endothelial cell recognition system that controls lymphocyte traffic into inflamed synovium. **Science** 233:556-558, 1986.

13. Veromaa T, Jalkanen S, Granfors K, Toivanen P. Inability to transfer immune unresponsiveness of chickens bursectomized at 60 hours of incubation. **Transplantation** 42:197-199, 1986.

14. Jalkanen ST, Bargatze RF, Herron LR, Butcher EC. A lymphoid cell surface glycoprotein involved in endothelial cell recognition and lymphocyte homing in man. **Eur J Immunol** 16:1195-1202, 1986.

15. Veromaa T, Vainio O, Eerola E, Lehtonen L, Jalkanen S, Toivanen P. T cell function in chickens bursectomized at 60 hours of incubation. **Transplantation** 43:533-537, 1987.

16. Jalkanen S, Bargatze RF, de los Toyos J, Butcher EC. Lymphocyte recognition of high endothelium: antibodies to distinct epitopes of an 85-95-kD glycoprotein antigen differentially inhibit lymphocyte binding to lymph node, mucosal, or synovial endothelial cells. **J Cell Biol** 105:983-990, 1987.

17. Korpela R, Jalkanen S, Paljärvi L, Toivanen P. Early embryonic bursectomy induces eosinophilia. **J Immunol** 139:3915-3917, 1987.

18. Jalkanen S, Jalkanen M, Bargatze R, Tammi M, Butcher EC. Biochemical properties of glycoproteins involved in lymphocyte recognition of high endothelial venules in man. **J Immunol** 141:1615-1623, 1988.

19. Veromaa T, Vainio O, Jalkanen S, Eerola E, Granfors K, Toivanen P. Expression of B-L and Bu-1 antigens in chickens buresctomized at 60 h of incubation. **Eur J Immunol** 18:225-230, 1988.

20. Wu NW, Jalkanen S, Streeter PR, Butcher EC. Evolutionary conservation of tissue-specific lymphocyte-endothelial cell recognition mechanisms involved in lymphocyte homing. **J Cell Biol** 107:1845-1851, 1988.

21. Jalkanen S, Nash GS, de los Toyos J, MacDermott RP, Butcher EC. Human lamina propria lymphocytes bear homing receptors and bind selectively to mucosal lymphoid high endothelium. **Eur J Immunol** 19:63-68, 1989.

22. Granfors K, Jalkanen S, von Essen R, Lahesmaa-Rantala R, Isomäki O, Pekkola-Heino K, Merilahti-Palo R, Saario R, Isomäki H, Toivanen A. Yersinia antigens in synovial-fluid cells from patients with reactive arthritis. **N Engl J Med** 320:216-221, 1989. *Comment in: N Engl J Med 1989 Jul 20;321(3):189-90.*

23. de los Toyos J, Jalkanen S, Butcher EC. Flow cytometric analysis of the Hermes homing-associated antigen on human lymphocyte subsets. **Blood** 74:751-760, 1989.

24. Forsberg UH, Ala-Kapee MM, Jalkanen S, Andersson LC, Schröder J. The gene for human lymphocyte homing receptor is located on chromosome 11. **Eur J Immunol** 19:409-412, 1989.

25. Forsberg U, Jalkanen S, Schröder J. Assignment of the human lymphocyte homing receptor gene to the short arm of chromosome 11. **Immunogenetics** 29:405-407, 1989.

26. Jalkanen S, Aho R, Kallajoki M, Ekfors T, Nortamo P, Gahmberg C, Duijvestin A, Kalimo H. Lymphocyte homing receptors and adhesion molecules in intravascular malignant lymphomatosis. **Int J Cancer** 44:777-782, 1989.

27. Jalkanen S, Joensuu H, Klemi P. Prognostic value of lymphocyte homing receptor and S phase fraction in non-Hodgkin's lymphoma. **Blood** 75:1549-1556, 1990.

28. Jalkanen S, Saari S, Kalimo H, Lammintausta K, Vainio E, Leino R, Duijvestijn AM, Kalimo K. Lymphocyte migration into the skin: the role of lymphocyte homing receptor (CD44) and endothelial cell antigen (HECA-452). **J Invest Dermatol** 94:786-792, 1990.

29. Wuorela M, Jalkanen S, Pelliniemi LJ, Toivanen P. Nurse cells of the bursa of Fabricius: do they exist? **Eur J Immunol** 20:913-917, 1990.

30. Mansikka A, Jalkanen S, Sandberg M, Granfors K, Lassila O, Toivanen P. Bursectomy of chicken embryos at 60 hours of incubation leads to an oligoclonal B cell compartment and restrected Ig diversity. **J Immunol** 13:779-785, 1990.

31. Granfors K, Jalkanen S, Lindebrg AA, Mäki-Ikola O, Von Essen R, Lahesmaa-Rantala R, Isomäki H, Saario R, Arnold WJ, Toivanen A. Salmonella lipopolysaccharide in synovial cells from patienys with reactive arthritis. **Lancet** 335:685-688, 1990. *Comment in: Lancet 1990 May 19;335(8699):1224.*

32. Joensuu H, Klemi PJ, Jalkanen S. Biologic progression in non-Hodgkin's lymphoma. A flow cytometric study. **Cancer** 65:2564-2571, 1990.

33. Jalkanen S, Joensuu H, Söderström K-O, Klemi P. Lymphocyte homing and clinical behavior of non-Hodgkin's lymphoma. **J Clin Invest** 87:1835-1840, 1991.

34. Joensuu H, Klemi PJ, Söderström K-O, Jalkanen S. Comparison of S-phase fraction, working formulation, and Kiel classification in non-Hodgkin's lymphoma. **Cancer** 68:1564-1571, 1991.

35. Granfors K, Jalkanen S, Toivanen P, Koski J, Lindebrg AA. Bacterial lipopolysaccharide in synovial fluid cells in shigella triggered reactive arthritis. **J Rheumatol** 19:500, 1992.

36. Jalkanen S, Jalkanen M. Lymphocyte CD44 binds the COOH-terminal heparin-binding domain of fibronectin. **J Cell Biol** 116:817-825, 1992.

37. Salmi M, Jalkanen S. Regulation of L-selectin expression on cultured bone marrow leukocytes and their precursors. **Eur J Immunol** 22:835-843, 1992.

38. Salmi M, Granfors K, Leirisalo-Repo M, Hämäläinen M, MacDermott R, Leino R, Havia T, Jalkanen S. Selective endothelial binding of interleukin-2-dependent human T-cell lines derived from different tissues. **Proc Natl Acad Sci USA** 89:11436-11440, 1992.

39. Hänninen A, Jalkanen S, Salmi M, Toikkanen S, Nikolakaros G, Simell O. Macrophages, T cell receptor usage, and endothelial cell activation in the pancreas at the onset of insulin-dependent diabetes mellitus. **J Clin Invest** 90:1901-1910, 1992.

40. Salmi M, Jalkanen S. A 90-kilodalton endothelial cell molecule mediating lymphocyte binding in humans. **Science** 257:1407-1409, 1992.

41. Klemi PJ, Alanen K, Jalkanen S, Joensuu H. Proliferating cell nuclear antigen (PCNA) as a prognostic factor in non-Hodgkin's lymphoma. **Br J Cancer** 66:739-743, 1992.

42. Salmi M, Grön-Virta K, Sointu P, Grenman R, Kalimo H, Jalkanen S. Regulated expression of exon v6 containing isoforms of CD44 in man: downregulation during malignant transformation of tumors of squamocellular origin. **J Cell Biol** 122:431-442, 1993.

43. Hänninen A, Salmi M, Simell O, Jalkanen S. Endothelial cell-binding properties of lymphocytes infiltrated into human diabetic pancreas. Implications for pathogenesis of IDDM. **Diabetes** 42:1656-1662, 1993.

44. Airas L, Salmi M, Jalkanen S. Lymphocyte-vascular adhesion protein-2 is a novel 70-kDa molecule involved in lymphocyte adhesion to vascular endothelium. **J Immunol** 151:4228-4238, 1993.

45. Salmi M, Kalimo K, Jalkanen S. Induction and function of vascular adhesion protein-1 at sites of inflammation. **J Exp Med** 178:2255-2260, 1993.

46. Joensuu S, Klemi PJ, Toikkanen S, Jalkanen S. Glycoprotein CD44 expression and its association with survival in breast cancer. **Am J Pathol** 143:867-874, 1993.

47. Joensuu H, Ristamäki R, Klemi PJ, Jalkanen S. Lymphocyte homing receptor (CD44) expression is associated with poor prognosis in gastrointestinal lymphoma. **Br J Cancer** 68:428-432, 1993.

48. Palojoki E, Toivanen P, Jalkanen S. Chicken B cells adhere to the CS-1 site of fibronectin throughout their bursal and postbursal development. **Eur J Immunol** 23:721-726, 1993.

49. Wuorela M, Jalkanen S, Toivanen P, Granfors K. *Yersinia* lipopolysaccharide is modified by human monocytes. **Infect Immun** 61:5261-5270, 1993.

50. Salmi M, Granfors K, MacDermott R, Jalkanen S. Aberrant binding of lamina propria lymphocytes to vascular endothelium in inflammatory bowel diseases. **Gastroenterology** 106:596-605, 1994.

51. Aho R, Jalkanen S, Kalimo H. CD44-hyaluronate interaction mediates *in vitro* lymphocyte binding to the white matter of the central nervous system. **J Neuropathol Exp Neurol** 53:295-302, 1994.

52. Joensuu H, Ristamäki R, Söderström K-O, Jalkanen S. Effect of treatment on the prognostic value of S-phase fraction in non-Hodgkin's lymphoma. **J Clin Oncol** 12:2167-2175, 1994.

53. Skurnik M, El Tahir Y, Saarinen M, Jalkanen S, Toivanen P. YadA mediates specific binding of enteropathogenic *Yersinia enterocolitica* to human intestinal submucosa. **Infect Immun** 62:1252-1261, 1994.

54. Ristamäki R, Joensuu H, Salmi M, Jalkanen S. Serum CD44 in malignant lymphoma: an association with treatment response. **Blood** 84:238-243, 1994.

55. Salmi M, Andrew DP, Butcher EC, Jalkanen S. Dual binding capacity of mucosal immunoblasts to mucosal and synovial endothelium in humans: dissection of the molecular mechanisms. **J Exp Med** 181:137-149, 1995.

56. Salmi M, Jalkanen S. Different forms of human vascular adhesion protein-1 (VAP-1) in blood vessels *in vivo* and in cultured endothelial cells: implications for lympohocyte-endothelial cell adhesion models. **Eur J Immunol** 25:2803-2812, 1995.

57. Salmi M, Grenman R, Grenman S, Nordman E, Jalkanen S. Tumor endothelium selectively supports binding of IL-2-propagated tumor-infiltrating lymphocytes. **J Immunol** 154:6002-6012, 1995.

58. Ristamäki R, Joensuu H, Söderström K-O, Jalkanen S. CD44v6 expression in non-Hodgkin's lymphoma: an association with low histological grade and poor prognosis. **J Pathol** 176:259-267, 1995.

59. Palojoki E, Jalkanen S, Toivanen P. Sialyl LewisX carbohydrate is expressed differentially during avian lymphoid cell development. **Eur J Immunol** 25:2544-2550, 1995.

60. Airas L, Hellman J, Salmi M, Bono P, Puurunen T, Smith DJ, Jalkanen S. CD73 is involved in lymphocyte binding to the endothelium: characterization of lymphocyte-vascular adhesion protein 2 identifies it as CD73. **J Exp Med** 182:1603-1608, 1995.

61. Salmi M, Jalkanen S. Human vascular adhesion protein1 (VAP-1) is a unique sialoglycoprotein that mediates carbohydrate-dependent binding of lymphocytes to endothelial cells. **J Exp Med** 183:569-579, 1996.

62. McNab G, Reeves JL, Salmi M, Hubscher S, Jalkanen S, Adams DH. Vascular adhesion protein 1 mediates binding of T cells to human hepatic endothelium. **Gastroenterology** 110:522-528, 1996.

63. Kantele JM, Arvilommi H, Kontiainen S, Salmi M, Jalkanen S, Savilahti E, Westerholm M, Kantele A. Mucosally activated circulating human B cells in diarrhea express homing receptors directing them back to the gut. **Gastroenterology** 110:1061-1067, 1996.

64. Hänninen A, Salmi M, Simell O, Andrew D, Jalkanen S. Recirculation and homing of lymphocyte subsets: dual homing-specificity of b7-integrin$^{high}$-lymphocytes in nonobese diabetic mice. **Blood** 88:934-944, 1996.

65. Airas L, Jalkanen S. CD73 mediates adhesion of B cells to follicular dendritic cells. **Blood** 88:1755-1764, 1996.

66. Hänninen A, Salmi M, Simell O, Jalkanen S. Mucosa-associated (b7-integrin$^{high}$) lymphocytes accumulate early in the pancreas of NOD mice and show aberrant recriculation behavior. **Diabetes** 45:1173-1180, 1996.

67. Arvilommi A-M, Salmi M, Kalimo K, Jalkanen S. Lymphocyte binding to vascular endothelium in inflamed skin revisited: a central role for vascular adhesion protein-1 (VAP-1). **Eur J Immunol** 26:825-833, 1996.

68. Ristamäki R, Joensuu H, Grön-Virta K, Salmi M, Jalkanen S. Origin and function of circulating CD44 in non-Hodgkin's lymphoma. **J Immunol** 158:3000-3008, 1997.

69. Aho R, Kalimo H, Salmi M, Smith D, Jalkanen S. Binding of malignant lymphoid cells to the white matter of the human central nervous system: role of different CD44 isoforms, b1, b2 and b7 integrins, and L-selectin. **J Neuropathol Exp Neurol** 56:557-568, 1997.

70. Hänninen A, Jaakkola I, Salmi M, Simell O, Jalkanen S. Ly-6C regulates endothelial adhesion and homing of $CD8^+$ T cells by activating integrin-dependent adhesion pathways. **Proc Natl Acad Sci USA** 94:6898-6903, 1997.

71. Soukka T, Salmi M, Joensuu H, Häkkinen L, Sointu P, Koulu L, Kalimo K, Klemi P, Grénman R, Jalkanen S. Regulation of CD44v6-containing isoforms during proliferation of normal and malignant epithelial cells. **Cancer Res** 57:2281-2289, 1997.

72. Arvilommi A-M, Salmi M, Airas L, Kalimo K, Jalkanen S. CD73 mediates lymphocyte binding to vascular endothelium in inflamed human skin. **Eur J Immunol** 27:248-254, 1997.

73. Uksila J, Salmi M, Butcher EC, Tarkkanen J, Jalkanen S. Function of lymphocyte homing-associated adhesion molecules on human natural killer and lymphokine-activated killer cells. **J Immunol** 158:1610-1617, 1997.

74. Salmi M, Rajala P, Jalkanen S. Homing of mucosal leukocytes to joints. Distinct endothelial ligands in synovium mediate leukocyte-subtype specific adhesion. **J Clin Invest** 99:2165-2172, 1997.

75. Airas L, Niemelä J, Salmi M, Puurunen T, Smith DJ, Jalkanen S. Differential regulation and function of CD73, a glycosyl-phosphatidylinositol-linked 70-kD adhesion molecule, on lymphocytes and endothelial cells. **J Cell Biol** 136:421-431, 1997.

76. Salmi M, Tohka S, Berg EL, Butcher EC, Jalkanen S. Vascular adhesion protein 1 (VAP-1) mediates lymphocyte subtype-specific, selectin-independent recognition of vascular endothelium in human lymph nodes. **J Exp Med** 186:589-600, 1997.

77. Arvilommi A-M, Salmi M, Jalkanen S. Organ-selective regulation of vascular adhesion protein-1 expression in man. **Eur J Immunol** 27:1794-1800, 1997.

78. Ristamäki R, Joensuu H, Lappalainen K, Teerenhovi L, Jalkanen S. Elevated serum CD44 level is associated with unfavorable outcome in non-Hodgkin's lymphoma. **Blood** 90:4039-4045, 1997.

79. Salmi M, Smith DJ, Bono P, Leu T, Hellman J, Matikainen M-T, Jalkanen S. A mouse molecular mimic of human vascular adhesion protein-1 (VAP-1). **Mol Immunol** 34:1227-1236, 1997.

80. Wuorela M, Jalkanen S, Kirveskari J, Laitio P, Granfors K. *Yersinia enterocolitica* serotype O:3 alters the expression of serologic HLA-B27 epitopes on human monocytes. **Infect Immun** 65:2060-2066, 1997.

81. Bono P, Salmi M, Smith DJ, Jalkanen S. Cloning and characterization of mouse vascular adhesion protein-1 reveals a novel molecule with enzymatic activity. **J Immunol** 160:5563-5571, 1998.

82. Salmi M, Hellman J, Jalkanen S. The role of two distinct endothelial molecules, vascular adhesion protein-1 and peripheral lymph node addressin, in the binding of lymphocyte subsets to human lymph nodes. **J Immunol** 160:5629-5636, 1998.

83. Hänninen A, Jaakkola I, Jalkanen S. Mucosal addressin is required for the development of diabetes in nonobese diabetic mice. **J Immunol** 160:6018-6025, 1998.

84. Kirveskari J, Jalkanen S, Mäki-Ikola O, Granfors K. Increased synovial endothelium binding and transendothelial migration of mononuclear cells during *Salmonella* infection. **Arthritis Rheum** 41:1054-1063, 1998.

85. Smith DJ, Salmi M, Bono P, Hellman J, Leu T, Jalkanen S. Cloning of vascular adhesion protein-1 reveals a novel multifunctional adhesion molecule. **J Exp Med** 188:17-27, 1998.

86. Ristamäki R, Joensuu H, Hagberg H, Kalkner KM, Jalkanen S. Clinical significance of circulating CD44 in non-Hodgkin´s lymphoma. **Int J Cancer** 79:221-225, 1998.

87. Kurkijärvi R, Adams DH, Leino R, Möttönen T, Jalkanen S, Salmi M. Circulating form of human vascular adhesion protein-1 (VAP-1): increased serum levels in inflammatory liver diseases. **J Immunol** 161:1549-1557, 1998.

88. Bono P, Salmi M, Smith DJ, Leppänen I, Horelli-Kuitunen N, Palotie A, Jalkanen S. Isolation, structural characterization, and chromosomal mapping of the mouse vascular adhesion protein-1 gene and promoter. **J Immunol** 161:2953-2960, 1998.

89. Jaakkola K, Knuuti J, Söderlund K, Saraste A, Jalkanen S, Voipio-Pulkki L-M. Labelling lymphocytes with techenetium$^{99m}$-hexamethyl propyleneamine oxime for scintigraphy: an improved labelling procedure. **J Immunol Methods** 214:187-197, 1998.

90. Salminen TA, Smith DJ, Jalkanen S, Johnson MS. Structural model of the catalytic domain of an enzyme with cell adhesion activity: human vascular adhesion protein-1 (HVAP-1) D4 domain is an amine oxidase. **Protein Eng** 11:1195-1204, 1998.

91. Wuorela M, Tohka S, Granfors K, Jalkanen S. Monocytes that have ingested *Yersinia enterocolitica* serotype O:3 acquire enhanced capacity to bind to nonstimulated vascular endothelial cells via P-selectin. **Infect Immun** 67:726-732, 1999.

92. Bono P, Jalkanen S, Salmi M. Mouse vascular adhesion protein-1 (VAP-1) is a sialoglycoprotein with enzymatic activity and is induced in diabetic insulitis. **Am J Pathol** 155:1613-1624, 1999.

93. Jaakkola K, Kaunismäki K, Tohka S, Yegutkin, G, Vänttinen E, Havia, T, Pelliniemi LJ, Virolainen M, Jalkanen S, Salmi M. Human vascular adhesion protein-1 in smooth muscle cells. **Am J Pathol** 155:1953-1965, 1999.

94. Salmi M, Tohka S, Jalkanen S. Human vascular adhesion protein-1 (VAP-1) plays a critical role in lymphocyte-endothelial cell adhesion cascade under shear. **Circ Res** 86:1245-1251, 2000. *Comment in: Circ Res. 2000 Jun 23;86(12):1190-2.*

95. Jaakkola K, Nikula T, Holopainen R, Vähäsilta T, Matikainen M-T, Laukkanen M-L, Huupponen R, Halkola L, Nieminen L, Hiltunen J, Parviainen S, Clark MR, Knuuti J, Savunen T, Kääpä P, Voipio-Pulkki LM, Jalkanen S. *In vivo* detection of vascular adhesion protein-1 in experimental inflammation. **Am J Pathol** 157:463-471, 2000.

96. Jaakkola K, Jalkanen S, Kaunismäki K, Vänttinen E, Saukko P, Alanen K, Kallajoki M, Voipio-Pulkki L-M, Salmi M. Vascular adhesion protein-1, intercellular adhesion molecule-1 and P-selectin mediate leukocyte binding to ischemic heart in humans. **J Am Coll Cardiol** 36:122-129, 2000.

97. Kirveskari J, Bono P, Granfors K, Leirisalo-Repo M, Jalkanen S, Salmi M. Expression of $a_4$-integrins on human neutrophils. **J Leukoc Biol** 68:243-250, 2000.

98. Kurkijärvi R, Yegutkin G, Gunson BK, Jalkanen S, Salmi M, Adams DH. Circulating soluble vascular adhesion protein 1 accounts for the increased serum monoamine oxidase activity in chronic liver disease. **Gastroenterology** 119:1096-1103, 2000.

99. Martelius T, Salmi M, Wu H, Bruggeman C, Hockerstedt K, Jalkanen S, Lautenschlager I. Induction of vascular adhesion protein-1 during liver allograft rejection and concomitant cytomegalovirus infection in rats. **Am J Pathol** 157:1229-1237, 2000.

100. Airas L, Niemelä J, Jalkanen S. CD73 engagement promotes lymphocyte binding to endothelial cells via a lymphocyte function-associated antigen-1-dependent mechanism. **J Immunol** 165:5411-7, 2000.

101. Yegutkin G, Henttinen T, Jalkanen S. Extracellular ATP formation on vascular endothelial cells is mediated by ecto-nucleotide kinase activities via phosphotransfer reactions. **Faseb J** 15:251-260, 2001.

102. Tohka S, Laukkanen M-L, Jalkanen S, Salmi M. Vascular adhesion protein 1 (VAP-1) functions as a molecular brake during granulocyte rolling and mediates recruitment *in vivo*. **Faseb J** 15:373-382, 2001.

103. Salmi M, Yegutkin G, Lehvonen R, Koskinen K, Salminen T, Jalkanen S. A cell surface amine oxidase directly controls lymphocyte migration. **Immunity** 14:265-276, 2001.

104. Salmi M, Jalkanen S. Human leukocyte subpopulations from inflamed gut bind to joint vasculature using distinct sets of adhesion molecules. **J Immunol** 166:4650-4657, 2001.

105. Irjala H, Salmi M, Alanen K, Grénman R, Jalkanen S. Vascular adhesion protein-1 mediates binding of immunotherapeutic effector cells to tumor endothelium. **J Immunol** 166:6937-6943, 2001.

106. Salmi M, Alanen K, Grenman S, Briskin M, Butcher EC, Jalkanen S. Immune cell trafficking in uterus and early life is dominated by the mucosal addressin MAdCAM-1 in humans. **Gastroenterology** 121:853-864, 2001. *Comment in: Gastroenterology 2001 Oct;121(4):1008-10.*

107. Jalkanen K, Leu T, Bono P, Salmi M, Jalkanen S, Smith, D. Distinct ligand binding properties of Mac-2-binding protein and mousephilin C-associated protein. **Eur J Immunol** 31:3075-3084, 2001.

108. Irjala H, Johansson E-L, Grénman R, Alanen K, Salmi M, Jalkanen S. Mannose receptor is a novel ligand for L-selectin and mediates lymphocyte binding to lymphatic endothelium. **J Exp Med** 194:1033-1042, 2001.

109. Kurkijärvi R, Jalkanen S, Isoniemi H, Salmi M. Vascular adhesion protein-1 (VAP-1) mediates lymphocyte-endothelial interactions in chronic kidney rejection. **Eur J Immunol** 31:2876-2884, 2001.

110. Blades MC, Manzo A, Ingegnoli F, Taylor PR, Panayi GS, Irjala H, Jalkanen S, Haskard DO, Perretti M, Pitzalis C. Stromal cell-derived factor 1 (CXCL12) induces human cell migration into human lymph nodes transplanted into SCID mice. **J Immunol** 168:4308-17, 2002.

111. Lalor PF, Edwards S, McNab G, Salmi M, Jalkanen S, Adams D. Vascular adhesion protein-1 mediates adhesion and transmigration of lymphocytes on human hepatic endothelial cells. **J Immunol** 169:983-92, 2002.

112. Yegutkin GG, Henttinen T, Samburski SS, Spychlala J, Jalkanen S. The evidence for two opposite, ATP-generating and ATP-consuming, extracellular pathways on endothelial and lymphoid cells. **Biochem J** 367:121-8, 2002.

113. Salmi M, Stolen C, Jousilahti P, Yegutkin GG, Tapanainen P, Janatuinen T, Knip M, Jalkanen S, Salomaa V. Insulin-regulated increase of soluble vascular adhesion protein-1 (VAP-1) in diabetes. **Am J Pathol** 161:2255-62, 2002.

114. Jaakkola I, Merinen M, Jalkanen S, Hänninen A. Ly6C induces clustering of LFA-1 (CD11a/CD18) and is involved in subtype-specific adhesion of CD8 T cells. **J Immunol** 170:1283-90, 2003.

115. Irjala H, Elima K, Johansson EL, Merinen M, Kontula K, Alanen K, Grenman R, Salmi M, Jalkanen S. The same endothelial receptor controls lymphocyte traffic both in vascular and lymphatic vessels. **Eur J Immunol** 33:815-24, 2003. *Comment in: Eur J Immunol 2003 May;33(5):1361-4.*

116. Maula S-M, Luukkaa M, Grenman R, Jackson D, Jalkanen S, Ristamäki R. Intratumoral lymphatics are essential for the metastatic spread and prognosis in squamous cell carcinomas of the head and neck region. **Cancer Res** 63:1920-6, 2003. *Comment in: Cancer Res 2003 Dec 1;63(23):8555-6, author reply 8588.*

117. Maksimow M, Santanen M, Jalkanen S, Hänninen A. Responding naive T cells differ in their sensitivity to Fas engagement: early death of many T cells is compensated by costimulation of surviving T cells. **Blood** 101:4022-8, 2003.

118. Yegutkin GG, Samburski SS, Jalkanen S. Soluble purine-converting enzymes circulate in human blood and regulate extracellular ATP level via counteracting pyrophosphatase and phosphotransfer reactions. **FASEB J** 17:1328-30, 2003.

119. Henttinen T, Jalkanen S, Yegutkin GG. Adherent leukocytes prevent adenosine formation and impair endothelial barrier function by Ecto-5'-nucleotidase/CD73-dependent mechanism. **J Biol Chem** 278:24888-95, 2003.

120. Irjala H, Alanen K, Grenman R, Heikkilä P, Joensuu H, Jalkanen S. Mannose receptor (MR) and common lymphatic endothelial and vascular endothelial receptor (CLEVER)-1 direct the binding of cancer cells to the lymph vessel endothelium. **Cancer Res** 63:4671-6, 2003.

121. Jaakkola I, Jalkanen S, Hänninen A. Diabetogenic T cells are primed both in pancreatic and gut-associated lymph nodes in NOD mice. **Eur J Immunol** 33:3255-64, 2003.

122. Stolen CM, Yegutkin GG, Kurkijärvi R, Bono P, Alitalo K, Jalkanen S. Origins of serum semicarbazide-sensitive amine oxidase. **Circ Res** 95: 50-7, 2004.

123. Niemelä J, Yegutkin G, Airas L, Kujari A-M, Rajala P, Jalkanen S. Interferon-alpha induced adenosine production on the endothelium: a mechanism mediated by CD73 (ecto-5´-nucleotidase) upregulation. **J Immunol** 172:1646-53, 2004.

124. Koskinen K, Vainio PJ, Smith DJ, Pihlavisto M, Ylä-Herttuala S, Jalkanen S, Salmi M. Granulocyte transmigration through endothelium is regulated by the oxidase activity of vascular adhesion protein-1 (VAP-1). **Blood** 103:3388-95, 2004.

125. Stolen CM, Madanat R, Marti L, Kari S, Yegutkin GG, Sariola H, Zorzano A, Jalkanen S. Semicarbazide sensitive amine oxidase overexpression has dual consequences: insulin mimicry and diabetes-like complications. **Faseb J** 18:702-4, 2004.

126. Yegutkin GG, Salminen T, Koskinen K, Kurtis C, McPherson MJ, Jalkanen S, Salmi M. A peptide inhibitor of vascular adhesion protein-1 (VAP-1) blocks leukocyte-endothelium interactions under shear stress. **Eur J Immunol** 34:2276-85, 2004.

127. Salmi M, Koskinen K, Henttinen T, Elima K, Jalkanen S. CLEVER-1 mediates lymphocyte transmigration through vascular and lymphatic endothelium. **Blood** 104:3849-57, 2004.

128. Martelius T, Salaspuro V, Salmi M, Krogerus L, Hockerstedt K, Jalkanen S, Lautenschlager I. Blockade of vascular adhesion protein-1 inhibits lymphocyte infiltration in rat liver allograft rejection. **Am J Pathol** 165:1993-2001, 2004.

129. Maula S-M, Salminen T, Kaitaniemi S, Nymalm Y, Smith DJ, Jalkanen S. Carbohydrates located on the top of the "cap" contribute to the adhesive and enzymatic functions of vascular adhesion protein-1. **Eur J Immunol** 35:2718-2727, 2005.

130. Stolen C, Ichihara-Marttila F, Koskinen K, Yegutkin GG, Turja R, Bono P, Skurnik M, Hänninen A, Jalkanen S, Salmi M. Absence of the endothelial oxidase AOC3 leads to abnormal leukocyte traffic in vivo. **Immunity** 22:105-115, 2005. *Comment in: Immunity 2005 Jan;22(1):5-7.*

131. Merinen M, Irjala H, Salmi M, Jaakkola I, Hänninen A, Jalkanen S. Vascular adhesion protein-1 is involved in both acute and chronic inflammation in the mouse. **Am J Pathol** 166:793-800, 2005.

132. Airenne TT, Nymalm Y, Kidron H, Smith DJ, Pihlavisto M, Salmi M, Jalkanen S, Johnson MS, Salminen TA. Crystal structure of the human vascular adhesion protein-1: unique structural features with functional implications. **Protein Sci** 14:1964-74, 2005.

133. Bonder C, Swain MG, Zbytnuik LD, Norman U, Yamanouchi J, Santamaria P, Aujebor M, Salmi M, Jalkanen S, Kubes P. Rules of recruitment for Th1 and Th2 lymphocyte trafficking in inflamed liver microcirculation: a role for alpha 4-integrin and vascular adhesion protein-1 (VAP-1). **Immunity** 23:153-163, 2005.

134. Niemelä H, Elima K, Henttinen T, Irjala H, Salmi M, Jalkanen S. Molecular identification of PAL-E, a widely used endothelial cell marker. **Blood** 106:3405-9, 2005.

135. Holmén C, Elsheikh E, Stenvinkel P, Qureshi AR, Pettersson E, Jalkanen S, Sumitran-Holgersson S. Circulating inflammatory endothelial cells contribute to endothelial progenitor cell dysfunction in vasculitis patients with kidney involvement. **J Am Soc Nephrol** 16:3110-20, 2005.

136. Kirton CM, Laukkanen ML, Nieminen A, Merinen M, Stolen CM, Armour K, Smith DJ, Salmi M, Jalkanen S, Clark MR. Function-blocking antibodies to human vascular adhesion protein-1: A potential anti-inflammatory therapy. **Eur J Immunol** 35:3119-30, 2005.

137. Maksimow M, Söderström TS, Jalkanen S, Eriksson JE, Hänninen A. Fas costimulation of naive CD4 T cells is controlled by NF-{kappa}B signaling and caspase activity. **J Leukoc Biol** 79:369-77, 2006.

138. Nieminen M, Henttinen T, Merinen M, Marttila-Ichihara, Eriksson J*, Jalkanen S*. Lymphocytes transmigrate through the endothelial cell body within a dynamic anchoring structure of intermediate filaments. **Nat Cell Biol** 8:156-62, 2006. *Comment in: Nat Cell Biol 2006 Feb; 8(2):105-7.*

139. Yu PH, Lu LX, Fan H, Kazachkov M, Jiang ZJ, Jalkanen S, Stolen C. Involvement of semicarbazide-sensitive amine oxidase-mediated deamination in lipopolysaccharide-induced pulmonary inflammation. **Am J Pathol** 168:718-26, 2006.

140. Salmi M, Jalkanen. Developmental regulation of the adhesive and enzymatic activity of vascular adhesion protein-1 (VAP-1) in humans. **Blood** 108:1555-1561, 2006.

141. Lautamäki R, Borra R, Iozzo P, Komu M, Lehtimäki T, Salmi M, Jalkanen S, Airaksinen KE, Knuuti J, Parkkola R, Nuutila P. Liver steatosis coexists with myocardial insulin resistance and coronary dysfunction in patients with type 2 diabetes. **Am J Physiol Endocrinol Metab** 291:E282-290, 2006.

142. Maksimow M, Miiluniemi M, Marttila-Ichihara, Jalkanen S, Hänninen A. Antigen targeting to endosomal pathway in dendritic cell vaccination activates regulatory T cells and attenuates tumor-immunity. **Blood** 108:1298-305, 2006.

143. Yegutkin GG, Samburski SS, Mikhailov A, Jalkanen S. The detection of micromolar pericellular ATP pool on lymphocyte surface by using lymphoid ecto-adenylate kinase as intrinsic ATP sensor. **Mol Biol Cell** 17:3378-85, 2006.

144. Marttila-Ichihara F, Smith DJ, Stolen C, Yegutkin G, Elima K, Mercier N, Merinen M, Kiviranta R, Pihlavisto M, Alaranta S, Pentikäinen U, Pentikäinen O, Fülöp F, Jalkanen S, Salmi M. Vascular amine oxidases are needed for leukocyte extravasation into inflamed joints in vivo. **Arthritis Rheum** 54:2852-62, 2006. *Comment in: Arthritis Rheum 2006 Sep;54(9):2707-10.*

145. Mercier N, Osborne-Pellegrin M, El Hadri K, Kakou A, Labat C, Loufrani L, Henrion D, Challande P, Jalkanen S, Fève B, Lacolley P. Carotid arterial stiffness, elastic fibre network and vasoreactivity in semicarbazide-sensitive amine-oxidase null mouse. **Cardiovasc Res** 72:349-357, 2006.

146. Yegutkin GG, Samburski SS, Jalkanen S, Novak I. ATP-consuming and ATP-generating enzymes secreted by pancreas. **J Biol Chem** 281:29441-7, 2006.

147. Hänninen A, Nurmela R, Maksimow M, Heino J, Jalkanen S, Kurts C. Islet beta-cell-specific T cells can use different homing mechanisms to infiltrate and destroy pancreatic islets. **Am J Pathol** 170:240-250, 2007.

148. Yegutkin GG, Samburski SS, Mortensen SP, Jalkanen S, Gonzalez-Alonso J. Intravascular ADP and soluble nucleotidases contribute to acute prothrombotic state during vigorous exercise in humans. **J Physiol** 579:553-564, 2007.

149. Holmén C, Elsheikh E, Christensson M, Liu J, Johansson AS, Qureshi AR, Jalkanen S, Sumitran-Holgersson S. Anti-endothelial cell autoantibodies selectively activate SAPK/JNK signalling in Wegener's granulomatosis. **J Am Soc Nephrol** 18:2497-2508, 2007.

150. Jalkanen S, Karikoski M, Mercier N, Koskinen K, Henttinen T, Elima K, Salmivirta K, Salmi M. The oxidase activity of vascular adhesion protein-1 (VAP-1) induces endothelial E- and P-selectins and leukocyte binding. **Blood** 110:1864-70, 2007. *Comment in: Blood 2007 Sep 15;110(6):1706-7 / doi:10.1182/blood-2007-06-095240*

151. Koskinen K, Nevalainen S, Karikoski M, Jalkanen S, Salmi M. VAP-1 deficient mice display defects in mucosal immunity and anti-microbial responses: implications for anti-adhesive applications. **J Immunol** 179:6160-8, 2007.

152. Kiss J, Yegutkin GG, Koskinen K, Savunen M, Jalkanen S, Salmi M. Interferon-beta protects from vascular leakage via upregulation of CD73. **Eur J Immunol** 37:3334-8, 2007.

153. Ruotsalainen E, Vauhkonen I, Salmenniemi U, Pihlajamäki J, Punnonen K, Kainulainen S, Jalkanen S, Salmi M, Laakso M. Markers of endothelial dysfunction and low-grade inflammation are associated in the offspring of type 2 diabetic subjects. **Atherosclerosis** 197:271-277, 2008.

154. Niemelä J, Ifergan I, Yegutkin GG, Jalkanen S, Prat A, Airas L. IFN-beta regulates CD73 and adenosine expression at the blood-brain barrier. **Eur J Immunol** 38:2718-26, 2008.

155. Mikhailov A, Sokolovskaya A, Yegutkin GG, Amdahl H, West A, Yagita H, Lahesmaa R, Thompson LF, Jalkanen S, Blokhin D, Eriksson JE. CD73 participates in cellular multiresistance program and protects against TRAIL-induced apoptosis. **J Immunol** 181:464-75, 2008.

156. Marttila-Ichihara F, Turja R, Miiluniemi M, Maksimow M, Karikoski M, Niemelä J, Martinez-Pomares L, Salmi M, Jalkanen S. Macrophage mannose receptor on lymphatics controls cell trafficking. **Blood** 112:64-72, 2008.

157. Mills JH, Thompson LF, Mueller C, Waickman AT, Jalkanen S, Niemelä J, Airas L, Bynoe MS. CD73 is required for efficient entry of lymphocytes into the central nervous system during experimental autoimmune encephalomyelitis. **Proc Natl Acad Sci U S A** 105:9325-30, 2008.

158. Kiss J, Jalkanen S, Fülöp F, Savunen M, Salmi M. Ischemia-reperfusion injury is attenuated in VAP-1 deficient mice and by VAP-1 inhibitors. **Eur J Immunol** 38:3041-9, 2008. *In this Issue: Eur J Immunol 2008; 38:2922–3.*

159. Martelius T, Salmi M, Krogerus L, Loginov R, Schoultz M, Karikoski M, Miiluniemi M, Soots A, Hockerstedt K, Jalkanen S, Lautenschlager I. Inhibition of semicarbazide-sensitive amine oxidases decreases lymphocyte infiltration in the early phases of rat liver allograft rejection. **Int J Immunopathol Pharmacol** 21:911-20, 2008.

160. Bour S, Caspar-Bauguil S, Iffiú-Soltész Z, Nibbelink M, Cousin B, Miiluniemi M, Salmi M, Stolen C, Jalkanen S, Casteilla L, Pénicaud L, Valet P, Carpéné C. Semicarbazide-sensitive amine oxidase/vascular adhesion protein-1deficiency reduces leukocyte infiltration into adipose tissue and favours fat deposition. **Am J Pathol** 174: 1075-1083, 2009.

161. Keuschnigg J, Henttinen T, Auvinen K, Karikoski M, Salmi M, Jalkanen S. The prototype endothelial marker PAL-E is a leukocyte trafficking molecule. **Blood** 114: 478-484, 2009.

162. Peltola K, Hollmén M, Maula SM, Rainio E, Ristamäki R, Luukkaa M, Sandholm J, Sundvall M, Elenius K, Koskinen PJ, Grénman R, Jalkanen S: Pim-1 kinase expression predicts radiation response in squamocellular carcinoma of head and neck and is under the control of epidermal growth factor receptor. **Neoplasia** 11: 629-636, 2009.

163. Kaitaniemi S, Elovaara H, Grön K, Kidron H, Liukkonen J, Salminen T, Salmi M, Jalkanen S, Elima K. The unique substrate specificity of human AOC2, a semicarbazide-sensitive amine oxidase. **Cell Mol Life Sci** 66: 2743-2757, 2009.

164. Marttila-Ichihara F, Auvinen K, Elima K, Jalkanen S, Salmi M. Vascular adhesion protein-1 enhances tumor growth by supporting recruitment of Gr-1+CD11b+ myeloid cells into tumors. **Cancer Res** 69: 7875-7883, 2009.

165. Zhang J, Gratchev A, Riabov V, Mamidi S, Schmuttermaier C, Krusell L, Kremmer E, Workman G, Sage EH, Jalkanen S, Goerdt S, Kzhyshkowska J. Novel GGA-binding site is required for intracellular sorting mediated by stabilin-1. **Mol Cell Biol** 29: 6097-6105, 2009.

166. Karikoski M, Irjala H, Maksimow M, Miiluniemi M, Granfors G, Hernesniemi S, Elima K, Moldenhauer G, Schledzewski K, Kzhyshkowska J, Goerdt S, Salmi M, Jalkanen S. Clever-1/Stabilin-1 regulates lymphocyte migration within lymphatics and leukocyte entrance to sites of inflammation. **Eur J Immunol** 39:3477-3487, 2009. *In this Issue: Eur J Immunol 2009; 39 3274–5.*

167. Kivi E, Elima K, Aalto K, Nymalm Y, Auvinen K, Koivunen E, Otto DM, Crocker PR, Salminen TA, Salmi M, Jalkanen S. Human Siglec-10 can bind to vascular adhesion protein-1 and serves as its substrate. **Blood** 114:5385-5392, 2009.

168. Puputti M, Tynninen O, Pernilä P, Salmi M, Jalkanen S, Paetau A, Sihto H, Joensuu H. Expression of KIT receptor tyrosine kinase in endothelial cells of juvenile brain tumours. **Brain Pathol** 20:763-70, 2010.

169. Marttila-Ichihara F, Castermans K, Auvinen K, de Oudebrink M, Jalkanen S, Griffioen A, Salmi M. Small molecule inhibitors of vascular adhesion protein-1 reduce recruitment of myeloid cells into tumors and attenuate tumor growth in mice. **J Immunol** 184:3164-3173, 2010. *In this Issue: J Immunol 2010;184(6):2741-2 / doi:10.4049/jimmunol.1090005*

170. Yegutkin GG, Hytönen J, Samburski SS, Yrjänäinen H, Jalkanen S, Viljanen MK. Disordered lymphoid purine metabolism contributes to the pathogenesis of persistent Borrelia garinii infection in mice. **J Immunol** 184:5112-5120, 2010.

171. Autio A, Ujula T, Luoto P, Salomäki S, Jalkanen S, Roivainen A. PET imaging of inflammation and adenocarcinoma xenografts using vascular adhesion protein 1 targeting peptide 68Ga-DOTAVAP-P1: comparison with 18F-FDG. **Eur J Nucl Med Mol Imaging** 37:1918-25, 2010.

172. Liaskou E, Karikoski M, Reynolds GM, Lalor PF, Weston CJ, Pullen N, Salmi M, Jalkanen S, Adams DH. Regulation of MAdCAM-1 expression in human hepatic endothelium by VAP-1 amine oxidase activity. **Hepatology** 53:661-72, 2011. *Research Highlights: Nat Rev Gastroenterol Hepatol 8(2), 2011, p62 | doi:10.1038/nrgastro.2010.224*

173. Hänninen A, Maksimow M, Alam C, Morgan DJ, Jalkanen S. Ly6C supports preferential homing of central memory CD8(+) T cells into lymph nodes. **Eur J Immunol** 41:634-44, 2011.

174. Shetty S, Weston CJ, Oo Y, Westerlund N, Stamataki Z, Youster J, Hubscher SG, Salmi M, Jalkanen S, Lalor PF, Adams DH. Clever-1 mediates the transmigration of T regulatory cells across human hepatic sinusoidal endothelium. **J Immunol** 186:4147-55, 2011.

175. Ålgars A, Karikoski M, Yegutkin GG, Stoitzner P, Niemelä J, Salmi M, Jalkanen S. Different role of CD73 in leukocyte trafficking via blood and lymph vessels. **Blood** 117:4387-93, 2011.

176. Yegutkin G, Marttila-Ichihara F, Karikoski M, Niemelä J, Laurila JP, Elima K, Jalkanen S, Salmi M. Altered purinergic signalling in CD73 deficient mice inhibits tumor progression. **Eur J Immunol** 41:1231-41, 2011.

177. Elovaara H, Kidron H, Parkash V, Nymalm Y, Bligt E, Ollikka P, Smith DJ, Pihlavisto M, Salmi M, Jalkanen S, Salminen TA. Identification of two imidazole binding sites and key residues for substrate specificity in human primary amine oxidase AOC3. **Biochemistry** 50: 5507-5520, 2011.

178. Palani S, Maksimow M, Miiluniemi M, Auvinen K, Jalkanen S, Salmi M. Stabilin-1/CLEVER-1, a type 2 macrophage marker, is an adhesion and scavenging molecule on human placental macrophages. **Eur J Immunol** 41: 2052-2063, 2011.

179. Aalto K, Autio A, Kiss E A, Elima K, Nymalm Y, Veres TZ, Marttila-Ichihara F, Elovaara H, Saanijoki T, Crocker PR, Maksimow M, Bligt E, Salminen TA, Salmi M, Roivainen A, Jalkanen S. Siglec-9 is a novel leukocyte ligand for vascular adhesion protein-1 and can be used in PET-imaging of inflammation and cancer. **Blood** 118:3725-3733, 2011.

180. Yegutkin GG, Helenius M, Kaczmarek E, Burns N, Jalkanen S, Stenmark S, Gerasimovskaya EV. Chronic hypoxia impairs extracellular nucleotide metabolism and barrier function in pulmonary artery vasa vasorum endothelial cells. **Angiogenesis** 14:503-513, 2011.

181. Autio A, Henttinen T, Sipilä HJ, Jalkanen S, Roivainen A. Mini-PEG spacering of VAP-1-targeting 68Ga-DOTAVAP-P1 peptide improves PET imaging of inflammation. **Eur J Nucl Med Mol Imaging Res** 1: 10, 2011.

182. Mercier N, Kiviniemi TO, Saraste A, Miiluniemi M, Silvola J, Jalkanen S, Yegutkin GG. Intravascular ATP turnover and purinergic control of coronary blood flow are impaired in young apolipoprotein E-deficient mice. **Am J Pathol** 180:419-28, 2012.

183. Aalto K, Maksimow M, Juonala M, Viikari J, Jula A, Kähönen M, Jalkanen S, Raitakari OT, Salmi M. Soluble Vascular Adhesion Protein-1 correlates with cardiovascular risk factors and early atherosclerotic manifestations. **Arterioscler Thromb Vasc Biol** 32:523-32, 2012.

184. Sihto H, Böhling T, Kavola H, Koljonen V, Salmi M, Jalkanen S, Joensuu H. Tumor infiltrating immune cells and outcome of merkel cell carcinoma: a population-based study. **Clin Cancer Res** 18: 2872-2881, 2012.

185. Ålgars A, Irjala H, Vaittinen S, Salmi M, Ristamäki R, Jalkanen S. Type and location of tumor-infiltrating macrophages and lymphatic vessel predict survival of colorectal cancer patients. **Int J Cancer** 131:864-873, 2012.

186. Keuschnigg J, Tvorogov D, Elima K, Salmi M, Alitalo K, Salminen T, Jalkanen S. PV-1 is recognized by the PAL-E antibody and forms complexes with NRP-1. **Blood** 120:232-235, 2012.

187. Helenius M, Jalkanen S, Yegutkin GG. Enzyme-coupled assays for simultaneous detection of nanomolar ATP, ADP, AMP, adenosine, inosine and pyrophosphate concentrations in extracellular fluids**. Biochim Biophys Acta** 1823:1967-1975, 2012.

188. Shetty S, Bruns T, Weston CJ, Stamataki Z, Oo YH, Long HM, Reynolds GM, Pratt G, Moss P, Jalkanen S, Hubscher SG, Lalor PF, Adams DH. Recruitment mechanisms of primary and malignant B cells to the human liver. **Hepatology** 56:1521-1531, 2012.

189. Yegutkin GG, Wieringa B, Robson SC, Jalkanen S. Metabolism of circulating ADP in the bloodstream is mediated via integrated actions of soluble adenylate kinase-1 and NTPDase1/CD39 activities. **FASEB J** 26:3875-3883, 2012.

190. Kiviniemi TO, Yegutkin GG, Toikka JO, Paul S, Aittokallio T, Janatuinen T, Knuuti J, Ronnemaa T, Koskenvuo JW, Hartiala JJ, Jalkanen S, Raitakari OT. Pravastatin-induced improvement in coronary reactivity and circulating ATP and ADP levels in young adults with type 1 diabetes. **Front Physiol** 3:338, 2012.

191. Mustjoki S, Auvinen K, Kreutzman A, Rousselot P, Hernesniemi S, Melo T, Lahesmaa-Korpinen A-M, Hautaniemi S, Bouchet S, Molimard M, Smykla R, Lee FY, Vakkila J, Jalkanen S, Salmi M, Porkka K. Rapid mobilization of cytotoxic lymphocytes induced by dasatinib therapy 1 in leukemia patients. **Leukemia** 27(4):914-24, 2013.

192. Li X-G, Autio A, Ahtinen H, Helariutta K, Liljenbäck H, Jalkanen S,Roivainen A, Airaksinen AJ. Translating the concept of peptide labeling with 5-deoxy-5-[18F]fluororibose into preclinical practice: 18F-labeling of Siglec-9 peptide for PET imaging of inflammation. **Chem Comm** 49: 3682-3684, 2013.

193. *Salmi M, Karikoski M, Elima K, Rantakari P, Jalkanen S. CD44 binds to macrophage mannose receptor on lymphatic endothelium and supports lymphocyte migration via afferent lymphatics. **Circ Res** 112:1577-82, 2013.*

194. Lee WY, Salmi M, Kelly M, Jalkanen S, Kubes P. Therapeutic advantage of anti-vascular adhesion protein-1 over anti-alpha4 integrin antibody in concanavalin a-induced hepatitis. **Hepatology** 58:1413-1423. 2013.

195. Autio A, Vainio PJ, Suilamo S, Mali A, Vainio J, Saanijoki T, Noponen T, Ahtinen H, Luoto P, Teräs M, Jalkanen S, Roivainen A. Preclinical evaluation of a radioiodinated fully human antibody for in vivo imaging of vascular adhesion protein-1-positive vasculature in inflammation. **J Nucl Med** 54: 1315-1319, 2013.

196. Keuschnigg J, Karinen S, Auvinen K, Irjala H, Mpindi J-P, Kallioniemi O, Hautaniemi S, Jalkanen S, Salmi M Plasticity of blood- and lymphatic endothelial cells and marker identification. **Plos One** 2013 Sep 10;8(9):e74293. doi:10.1371/journal.pone.0074293.

197. Li XG, Helariutta K, Roivainen A, Jalkanen S, Knuuti J, Airaksinen AJ. Using 5-deoxy-5-[18F]fluororibose to glycosylate peptides for positron emission tomography. **Nature Protocols** 9: 138-145, 2014.

198. Bellingan G, Maksimow M, Howell DC, Stotz M, Beale R, Beatty M, Walsh T, Binning A, Davidson A, Kuper M, Shah S, Cooper J, Waris M, Yegutkin GG, Jalkanen J, Salmi M, Piippo I, Jalkanen M, Montgomery M, Jalkanen S. The impact of intravenous interferon-beta-1a (FP-1201) on lung CD73 expression in vitro, and on acute lung injury mortality in an open-label study. **Lancet Respir Med** 2:98-107, 2014.

199. Schulz O, Ugur M, Friedrichsen M, Radulovic K, Niess JH, Jalkanen S, Krueger A, Pabst O: Hypertrophy of infected Peyer's patches arises from global, interferon-receptor, and CD69-independent shutdown of lymphocyte egress. **Mucosal Immunol** 7:892–904, 2014.

200. Esser C, Bachmann A, Kuhn D, Schuldt K, Forster B, Thiel M, May J, Koch-Nolte F, Yanez-Mo M, Sanchez-Madrid F, Schinkel AH, Jalkanen S, Craig AG, Bruchhaus I, Horstmann RD. Evidence of promiscuous endothelial binding by Plasmodium falciparum-infected erythrocytes. **Cell Microbiol** 6:701–708, 2014.

201. Aalto K, Havulinna AS, Jalkanen S, Salomaa V, Salmi M. Soluble vascular adhesion protein-1 predicts incident major adverse cardiovascular events and improves reclassification in a finnish prospective cohort study. **Circ Cardiovasc Genet** 7:529-35, 2014.

202. Lim ET, Wurtz P, Havulinna AS, Palta P, Tukiainen T, Rehnstrom K, Esko T, Magi R, Inouye M, Lappalainen T, Chan Y, Salem RM, Lek M, Flannick J, Sim X, Manning A, Ladenvall C, Bumpstead S, Hamalainen E, Aalto K, Maksimow M, Salmi M, Blankenberg S, Ardissino D, Shah S, Horne B, McPherson R, Hovingh GK, Reilly MP, Watkins H, Goel A, Farrall M, Girelli D, Reiner AP, Stitziel NO, Kathiresan S, Gabriel S, Barrett JC, Lehtimaki T, Laakso M, Groop L, Kaprio J, Perola M, McCarthy MI, Boehnke M, Altshuler DM, Lindgren CM, Hirschhorn JN, Metspalu A, Freimer NB, Zeller T, Jalkanen S, Koskinen S, Raitakari O, Durbin R, MacArthur DG, Salomaa V, Ripatti S, Daly MJ, Palotie A; Sequencing Initiative Suomi (SISu) Project. Distribution and medical impact of loss-of-function variants in the finnish founder population **PLoS Genet** 10(7):e1004494. doi: 10.1371/journal.pgen.1004494. eCollection 2014 Jul.

203. Auvinen K, Jalkanen S, Salmi M. Expression and function of endothelial selectins during human development. **Immunology** 143:406-415, 2014.

204. Maksimow M, Kyhälä L, Nieminen A, Kylänpää L, Aalto K, Elima K, Mentula P, Lehti M, Puolakkainen P, Yegutkin GG, Jalkanen S, Repo H, Salmi M. Early prediction of persistent organ failure by soluble CD73 in patients with acute pancreatitis **Crit Care Med** 42, 2556-2564, 2014.

205. Metsola J, Maksimow M, Ojaniemi M, Metsola H, Marttila-Ichihara F, Vuolteenaho R, Yegutkin GG, Salmi M, Hallman M, Jalkanen S. Postnatal development and LPS-responsiveness of pulmonary adenosine receptor expression and of adenosine-metabolizing enzymes in mice. **Pediatr Res** 76: 515-521, 2014.

206. Dunkel J, Aguilar-Pimentel JA, Ollert M, Fuchs H, Gailus-Durner V, de Angelis MH, Jalkanen S, Salmi M, Veres TZ. Endothelial amine oxidase aoc3 transiently contributes to adaptive immune responses in the airways. **Eur J Immunol** 44:3232-3239, 2014.

207. Virtanen SS, Kukkonen-Macchi A, Vainio M, Elima K, Harkonen PL, Jalkanen S, Yegutkin GG. Adenosine inhibits tumor cell invasion via receptor-independent mechanisms. **Mol Cancer Res** 2:1863-1874, 2014.

208. Kelkka T, Kienhöfer D, Hoffmann M, Linja M, Wing K, Sareila O, Hultqvist M, Laajala E, Chen Z, Vasconcelos J, Neves E, Guedes M, Marques L, Krönke G, Helminen M, Kainulainen L, Olofsson P, Jalkanen S, Lahesmaa R, Souto-Carneiro MM, Holmdahl R. Reactive oxygen species deficiency induces autoimmunity with type 1 interferon signature. **Antioxid Redox Signal** 21: 2231-2245, 2014.

209. Karikoski M, Marttila-Ichihara F, Elima K, Rantakari P, Hollmen MK, Kelkka T, Gerke H, Huovinen V, Irjala H, Holmdahl R, Salmi M, Jalkanen S. Clever-1/stabilin-1 controls cancer growth and metastasis**. Clin Cancer Res** 20:6452-6464, 2014.

210. Yegutkin GG, Auvinen K, Karikoski M, Rantakari P, Gerke H, Elima K, Maksimow M, Quintero IB, Vihko P, Salmi M, Jalkanen S. Consequences of the lack of CD73 and prostatic acid phosphatase in the lymphoid organs. **Mediators Inflamm,** 2014 014:485743. doi: 10.1155/2014/485743. Epub 2014 Aug 24.

211. Yegutkin GG, Auvinen K, Rantakari P, Hollmén M, Karikoski M, Grénman R, Elima K, Jalkanen S, Salmi M. Ecto-5'-nucleotidase/CD73 enhances endothelial barrier function and sprouting in blood but not lymphatic vasculature. **Eur J Immunol** 45:562-73, 2015.

212. Ahtinen H, Kulkova J, Lindholm L, Eerola E, Hakanen AJ, Moritz N, Söderström M, Saanijoki T, Jalkanen S, Roivainen A, Aro HT. (68)Ga-DOTA-Siglec-9 PET/CT imaging of peri-implant tissue responses and staphylococcal infections. **EJNMMI Res**, 2014 Aug 8;4:45. doi: 10.1186/s13550-014-0045-3. eCollection 2014.

213. Weston CJ, Shepherd EL, Claridge LC, Rantakari P, Curbishley SM, Tomlinson JW, Hubscher SG, Reynolds GM, Aalto K, Anstee QM, Jalkanen S, Salmi M, Smith DJ, Day CP, Adams DH. Vascular adhesion protein-1 promotes liver inflammation and drives hepatic fibrosis. **J Clin Invest** 125:501-20, 2015.

214. Jalkanen J, Yegutkin GG, Hollmén M, Aalto K, Kiviniemi, T, Salomaa V, Jalkanen S, Harri Hakovirta H. Aberrant circulating levels of purinergic signaling markers are associated with several key aspects of peripheral atherosclerosis and thrombosis. **Circ Res** 116:1206-15, 2015.

215. Johansson J, Tabor V, Wikell A, Jalkanen S, Fuxe J. TGF-β1-induced epithelial-Mesenchymal transition promotes monocyte/macrophage properties in breast cancer cells. **Front Oncol** 5:3. doi: 10.3389/fonc.2015.00003. eCollection 2015.

216. Rantakari P, Auvinen K, Valtonen J, Karikoski M, Gerke H, Jäppinen J, IIftakhar-E-Khuda I, Keuschnigg J, Miyasaka M, Elima K, Jalkanen S, Salmi M. Plvap controls the entry of antigens to conduits and lymphocyte transmigration to parenchyma in the lymphatic sinus of lymph nodes. **Nature Immunol** 16:386-96, 2015.

217. Ritchie SC, Würtz P, Nath AP, Abraham G, Havulinna AS, Fearnley LG, Sarin A-P, Kangas AJ, Soininen P, Aalto K, Seppälä I, Raitoharju E, Salmi M, Maksimow M, Männistö S, Kähönen M, Juonala

M, Ripatti S, Lehtimäki T, Jalkanen S, Perola M, Raitakari O, Salomaa V, Ala-Korpela M, Kettunen J, Inouye M. The biomarker GlycA is associated with chronic inflammation and predicts long-term risk of severe infection. **Cell Systems** 1(4):293-301, 2015.

218. Hollmén M, Karaman S, Schwager S, Lisibach A, Christiansen AJ, Maksimow M, Varga Z, Jalkanen S, Detmar M. G-CSF-regulates macrophage phenotype and associates with poor overall survival in human triple-negative breast cancer. **OncoImmunology** doi: 10.1080/2162402X.2015.1115177, 2015.

219. Wang Q, Würtz P, Auro K, Mäkinen VP, Kangas AJ, Soininen P, Tiainen M, Tynkkynen T, Jokelainen J, Santalahti K, Salmi M, Blankenberg S, Zeller T, Viikari J, Kähönen M, Lehtimäki T, Salomaa V, Perola M, Jalkanen S, Järvelin MR, Raitakari OT, Kettunen J, Lawlor DA, Ala-Korpela M. Metabolic profiling of pregnancy: cross-sectional and longitudinal evidence. **BMC Med.** 14:205, 2016.

220. Palani S, Elima K , Ekholm E, Jalkanen S, Salmi M. Monocyte stabilin-1 suppresses the activation of Th1 lymphocytes. **J Immunol** 196:115-123, 2016.

221. Takeda A, Hossain MS, Rantakari P, Simmons S, Sasaki N, Salmi M, Jalkanen S, Miyasaka M. Thymocytes in Lyve1-CRE/S1pr1f/f Mice Accumulate in the Thymus due to Cell-Intrinsic Loss of Sphingosine-1-Phosphate Receptor Expression. **Front Immunol.**7:489. eCollection 2016.

222. Silvola JM, Virtanen H, Siitonen R, Hellberg S, Liljenbäck H, Metsälä O, Ståhle M, Saanijoki T, Käkelä M, Hakovirta H, Ylä-Herttuala S, Saukko P, Jauhiainen M, Veres TZ, Jalkanen S, Knuuti J, active in atherosclerotic plaques. **Sci Rep.** Oct 12;6:35089. doi: 10.1038/srep35089, 2016.

223. Takeda A, Kobayashi D, Aoi K, Sasaki N, Sugiura Y, Igarashi H, Tohya K, Inoue A, Hata E, Akahoshi N, Hayasaka H, Kikuta J, Scandella E, Ludewig B, Ishii S, Aoki J, Suematsu M, Ishii M, Takeda K, Jalkanen S, Miyasaka M, Umemoto E. Fibroblastic reticular cell-derived lysophosphatidic acid regulates confined intranodal T-cell motility. **Elife** 5. pii: e10561. doi: 10.7554/eLife.10561, 2016.

224. Rantakari P, Patten DA, Valtonen J, Karikoski M, Gerke H, Dawes H, Laurila J, Ohlmeier S, Elima K, Hübscher SG, Weston CJ, Jalkanen S, Adams DH, Salmi M, Shetty S. Stabilin-1 expression defines a subset of macrophages that mediate tissue homeostasis and prevent fibrosis in chronic liver injury. **PNAS** 113:9298.9303, 2016.

225. Laurila JP, Laukkanen MO, Joensuu H, Salmi M, Jalkanen S. Leukocyte trafficking is not affected by multikinase inhibitors sunitinib or sorafenib in mice. **Int J Cancer** 139:2270-2276, 2016.

226. Iftakhar-E-Khuda I, Fair-Mäkelä R, Kukkonen-Macchi A, Elima K, Karikoski M, Rantakari P, Miyasaka M, Salmi M, Jalkanen S. Gene-expression profiling of different arms of lymphatic vasculature identifies candidates for manipulation of cell traffic. **PNAS** 113:10643-10648, 2016**.**

227. Loukovaara S, Sandholm J, Aalto K, Liukkonen J, Jalkanen S, Yegutkin GG. Deregulation of ocular nucleotide homeostasis in patients with diabetic retinopathy. **J Mol Med** 95:193-204, 2017.

228. Patten DA, Wilson GK, Bailey D, Shaw RK, Jalkanen S, Salmi M, Rot A, Weston CJ, Adams DH, Shetty S. Human liver sinusoidal endothelial cells promote intracellular crawling of lymphocytes during recruitment: a new step in migration. **Hepatology** 65:294-309, 2017.

229. Munukka E, Rintala A, Toivonen R, Nylund M, Yang B, Takanen A, Hänninen A, Vuopio J, Huovinen P, Jalkanen S, Pekkala S. Faecalibacterium prausnitzii treatment improves hepatic health and reduces adipose tissue inflammation in high-fat fed mice**. ISME J** 11:1667-1679, 2017**.**

230. Marttila-Ichihara F, Elima K, Auvinen K, Veres TZ, Rantakari P, Weston C, Miyasaka M, Adams D, Jalkanen S, Salmi M. Amine oxidase activity regulates the development of pulmonary fibrosis. **FASEB J.** 31:2477-2491, 2017

231. Ahola-Olli AV, Würtz P, Havulinna AS, Aalto K, Pitkänen N, Lehtimäki T, Kähönen M, Lyytikäinen LP, Raitoharju E, Seppälä I, Sarin AP, Ripatti S, Palotie A, Perola M, Viikari JS, Jalkanen S, Maksimow M, Salomaa V, Salmi M, Kettunen J, Raitakari OT. Genome-wide Association Study Identifies 27 Loci Influencing Concentrations of Circulating Cytokines and Growth Factors. **Am J Hum Genet** 100:40-50, 2017.

232. Veres TZ, Kopcsányi T, van Panhuys N, Gerner MY, Liu Z, Rantakari P, Dunkel J, Miyasaka M, Salmi M, Jalkanen S, Germain RN. Allergen-Induced CD4+ T Cell Cytokine Production within Airway Mucosal Dendritic Cell-T Cell Clusters Drives the Local Recruitment of Myeloid Effector Cells. **J Immunol** 198:895-907, 2017.

233. Veres TZ, Kopcsányi T, Tirri M, Braun A, Miyasaka M, Germain RN, Jalkanen S*, Salmi M*.Intubation-free in vivo imaging of the tracheal mucosa using two-photon microscopy. **Sci Rep** 7:694, doi: 10.1038/s41598-017-00769-6.2017, *egual contribution

234. Santalahti K, Havulinna A, Maksimow M. Zeller T, Blankenberg S, Vehtari A, Joensuu H, Jalkanen S, Salomaa V, Salmi M. Plasma levels of hepatocyte growth factor and placental growth factor predict mortality in a general population: a prospective cohort study. **J Intern Med** 282: 340-352, 2017.

235. Tervahartiala M, Taimen P, Mirtti T, Koskinen I, Ecke T, Jalkanen S, Boström PJ. Immunological tumor status may predict response to neoadjuvant chemotherapy and outcome after radical cystectomy in bladder cancer. **Sci Rep** 7:12682, 2017.

236. Hagert C, Sareila O, Kelkka T, Nandakumar KS, Collin M, Xu B, Guérard S, Bäcklund J, Jalkanen S, Holmdahl R. Chronic active arthritis driven by macrophages without involvement of T cells: A novel experimental model of rheumatoid arthritis. **Arthritis Rheumatol** 70:1343-1353, 2018.

236. Hagert C, Sareila O, Kelkka T, Jalkanen S, Holmdahl R. The macrophage mannose receptor regulates mannan-induced psoriasis, psoriatic arthritis, and rheumatoid arthritis-like disease models. **Front Immunol** 9:114, 2018.

237. Dunkel J, Viitala M, Karikoski M, Rantakari P, Virtakoivu R, Elima K, Hollmén M, Jalkanen S, Salmi M. Enhanced antibody production in Clever-1/Syabilin-1 deficient mice. **Front Immunol** 9:2257, 2018.

238. Elo P, Tadayon S, Liljenbäck H, Teuho J, Käkelä M, Koskensalo K, Saunavaara V, Virta J, Veres TZ, Kiviniemi A, Saraste A, Marjamäki P, Airas L, Jalkanen S, Roivainen A. Vascular adhesion protein-1 is actively involved in the development of inflammatory lesions in rat models of multiple sclerosis. **J Neuroinflammation** 15:128, 2018.

**Review articles**

Eerola E, Jalkanen S, Lassila O, Toivanen P. Lymfosyyttien erilaistuminen. **Duodecim** 99:923-929, 1983.

Butcher EC, Lewinsohn D, Duijvestijn A, Bargatze R, Wu N, Jalkanen S. Interactions between endothelial cells and leukocytes. **J Cell Biochem** 30:121-131, 1986.

Jalkanen S, Reichert RA, Gallatin WM, Bargatze RF, Weissman IL, Butcher EC. Homing receptors and the control of lymphocyte migration. **Immunol Rev** 91:39-60, 1986.

Jalkanen S, Steere AC, Wu N, Butcher EC. Evidence of multiple organ specific endothelial cell recognition systems mediating lymphocyte traffic in man. **J Cell Biochem** 10:571-580, 1987.

Jalkanen S, Wu N, Bargatze RF, Butcher EC. Human lymphocyte and lymphoma homing receptors. **Annu Rev Med** 38:467-476, 1987.

Jalkanen S. Lymphocyte-endothelial cell interactions. **Med Biol** 65:223-227, 1987.

Hurme M, Jalkanen S, Vakkila J. Valkosolujen adheesiomolekyylit ja niiden kliininen merkitys. **Duodecim** 104:1507-1514, 1988.

Jalkanen S, Streeter P, Lakey E, Bargatze R, Butcher EC. Lymphocyte and endothelial cell recognition elements that control lymphocyte traffic to mucvosa-associated lymphatic tissues. **Monogr Allergy** 24:144-149, 1988.

Jalkanen S. Leukocyte-endothelial cell interaction and the control of leukocyte migration into inflamed synovium. **Springer Semin Immunopathol** 11:187-198, 1989.

Jalkanen S. Lymphocyte homing into the gut. **Springer Semin Immunopathol** 12:153-164, 1990.

Salmi M, Jalkanen S. Regulation of lymphocyte traffic to mucosa-associated lymphatic tissues. **Gastroenterol Clin North Am** 20:495-510, 1991.

Joensuu H, Klemi P, Söderström KO, Jalkanen S. The effect of lymphocyte homing receptors in the progression and prognosis of lymphoma. **Duodecim** 108:387-392, 1992.

Jalkanen S, Salmi M. Vascular adhesion protein-1(VAP-1) - a new adhesion molecule recruiting lymphocytes to sites of inflammation. **Res Immunol** 144:746-749, 1993.

Ristamäki R, Joensuu H, Jalkanen S. Does soluble CD44 reflect the clinical behavior of malignancies. **Curr Top Microbiol Immunol** 213:155-166, 1996.

Salmi M, Jalkanen S. How do lymphocytes know where to go: current concepts and enigmas of lymphocyte homing. **Adv Immunol** 64:139-218, 1997.

Salmi M, Adams D, Jalkanen S. Cell adhesion and migration. IV. Lymphocyte trafficking in the intestine and liver. **Am J Physiol** 274:G1-G6, 1998.

Salmi M, Jalkanen S. Endothelial ligands and homing of mucosal lymphocytes in extraintestinal manifestations of IBD. **Inflamm Bowel Dis** 4:149-156, 1998.

Ristamäki R, Joensuu H, Jalkanen S. Serum CD44 in non-Hodgkin's lymphoma. **Leuk Lymphoma** 33:433-440, 1999.

Salmi M, Jalkanen S. Molecules controlling lymphocyte migration to the gut. **Gut** 45:148-153, 1999.

Salmi M, Jalkanen S. VAP-1: an adhesin and an enzyme. **Trends Immunol**, 22:211-216, 2001.

Jalkanen S, Salmi M. Cell surface monoamine oxidases: enzymes in search of a function. **Embo J** 20:3893-3901, 2001.

Grant AJ, Lalor PF, Salmi M, Jalkanen S, Adams DH. Homing of mucosal lymphocytes to the liver in the pathogenesis of hepatic complications of inflammatory bowel disease. **Lancet** 359:150-157, 2002.

Jalkanen S. Immunologia biotieteenä. **Duodecim** 119:747-8, 2003.

Salmi M, Jalkanen S. Lymphocyte homing to the gut: attraction, adhesion and commitment. **Immunol Rev** 206:100-13, 2005.

Salmi M, Jalkanen S. Cell-surface enzymes in control of leukocyte trafficking. **Nat Rev Immunol** 5:760-771, 2005.

Jalkanen S. Adheesiomolekyyleistäkö apua? **Duodecim** 124:1746-52, 2008.

Jalkanen S, Salmi M. VAP-1 and CD73, endothelial cell surface enzymes in leukocyte extravasation. **Arterioscler Thromb Vasc Biol** 28:18-26, 2008.

Salmi M, Jalkanen S. Homing-associated molecules CD73 and VAP-1 as targets to prevent harmful inflammations and cancer spread. **FEBS Lett** 585:1543-1550, 2011.

Salmi M, Jalkanen S. Ecto-enzymes controlling leukocyte traffic. **Eur J Immunol** 42: 284-292, 2012.
Roivainen A, Jalkanen S, Nanni C. Gallium-labelled peptides for imaging of inflammation. **Eur J Nucl Med Mol Imaging** 39 Suppl 1: 68-77, 2012.

Salmi M, Jalkanen S. Host CD73 impairs anti-tumor immunity. **OncoImmunology** 1-2:247-8, 2012.

Autio A, Jalkanen S, Roivainen A: Nuclear imaging of inflammation: homing-associated molecules as targets. **EJNMMI Res** 3: 1, 2013.

Salmi M, Jalkanen S. Ectoenzymes in leukocyte migration and their therapeutic potential. **Semin Immunopathol** 36:163-76, 2014.

Salmi M, Jalkanen S. Vascular Adhesion Protein-1: a cell surface amine oxidase in translation. **Antioxid Redox Signal** 2017 (invited review) epub ahead..

**B) Books**

Granfors K, Jalkanen S. Infektio aseptisen niveltulehduksen käynnistäjänä. In **Reumataudit (Textbook in Rheumatoid Diseases)**, eds. Isomäki H, Leirisalo-Repo M, Hämäläinen M. Duodecim, Helsinki, 1994.

Jalkanen S, Salmi M. Lymphocytes: Recirculation. In **Encyclopedia of Life Sciences**, Ed. Macmillian L. Nature Scientific Publishing Group, New York, 1999. (http://www.els.net/elsonline/html/A0001200.html#A0001200).

Jalkanen S, Salmi M. Principles of immune recognition. Lymphocyte adhesion and trafficking. In **Clinical Immunology**, 2nd edition, eds. Robert RR, Fleisher TA, Shearer WT, Kotzin B, Schroeder HWJ, Harcourt Publishers, London, 2001.

Salmi M, Jalkanen S. Leukosyyttiantigeenit: CD-järjestelmä**.** In **Mikrobiologia ja infektiosairaudet**, eds. Huovinen P, Meri S, Peltola H, Vaaera M, Vaheri A, Valtonen V. Kustannus OY Duodecim, Helsinki, pp 673-674, 2003.

Salmi M, Jalkanen S. Lymfosyyttikierto. In **Mikrobiologia ja infektiosairaudet**, eds. Huovinen P, Meri S, Peltola H, Vaaera M, Vaheri A, Valtonen V. Kustannus OY Duodecim, Helsinki, pp 675-679, 2003.

Salmi M, Adams D, Jalkanen S. Systematic manifestations of mucosal diseases: trafficking of gut immune cells to joints and liver. In **Mucosal Immunology**, eds. Mestecky J, Lamm ME, McGhee JR, Bienenstock J, Mayer L, Strober W. Academic Press, pp 1389-1398, 2004.

Jalkanen S, Salmi M. Lymphocyte interaction with microvascular endothelium. In **Microvascular Research: Biology and Pathology**, ed. Shepro D. Elsevier Academic Press, Amsterdam, Boston, pp 519-522, 2006.

Jalkanen S, Salmi M. Lymphoid organ development, cell trafficking and regulation of lymphocyte responses In **Primary Immunodeficiency Diseases**, A Molecular and Cellular Approach, 2nd edition, eds. Ochs HD, Smith E, Puck JM. Oxford University Press, Oxford, pp 93-102, 2006.

Jalkanen S, Salmi M. Lymphocytes: Recirculation. In **Encylopedia of Life Sciences,** John Wiley Sons, Ltd, (http://www.els.net/[DOI:10.1002/9780470015902.a0001200.pub2]), 2007.

Salmi M, Jalkanen S. Adhesion Molecules: Function and Inhibition. Vascular adhesion protein-1 (VAP-1). In **Progress in Inflammation Research**, ed. Ley K. Series ed. Parnham MJ, Basel, Birkhäuser Publishing, pp 237-251, 2007.

Jalkanen S, Salmi M. Principles of immune recognition. Lymphocyte adhesion and trafficking. In **Clinical Immunology: Principles and Practice**, 3rd edition, eds. Rich RR, Fleisher TA, Shearer WT, Schroeder HW, III., Frew, AJ, Weyand CM, pp 197-209, 2008.

Salmi M, Jalkanen S. Copper amine oxidases in adhesion molecules in renal pathology and in Alzheimer's disease and VAP-1 in leukocyte migration. Role of VAP-1 in leukocyte migration. In **Copper Amine Oxidases: Structures, Catalytic Mechanisms and Role in Pathophysiology**, eds. Floris, G, Mondovi B. CRC Press, Taylor and Francis Group, pp 206-217, 2009.

Salmi M, Jalkanen S. Leukosyyttiliikenne. In **Mikrobiologia, immunologia ja infektiosairaudet. Duodecim**, eds. Hedman K, Heikkinen T, Huovinen P, Järvinen A, Meri S, Vaara M, Kustannus OY Duodecim, Helsinki, pp 66-71, 2011.

Jalkanen S, Salmi M. Principles of immune recognition. Lymphocyte adhesion and trafficking. In **Clinical Immunology: Principles and Practice**, 4th edition, eds. Rich RR, Fleisher TA, Shearer WT, Schroeder HW, Jr, Frew AJ, Weyand CM, 2012.

Jalkanen S, Salmi M. Lymphocytes: Recirculation. In **eLS,** John Wiley & Sons, Ltd, Chichester. http://www.els.net [doi: 10.1002/9780470015902.a0001200.pub3], 2013.

Jalkanen S, Salmi M. Lymphoid organ development, cell trafficking and regulation of lymphocyte responses In **Primary Immunodeficiency Diseases.** A Molecular and Cellular Approach, 3rd edition, eds. Ochs HD, Smith E, Puck JM. Oxford University Press, New York, pp 105-116, 2013.

Salmi M, Adams DH, Trivedi P, Hänninen A, Jalkanen S. Systematic manifestations of mucosal diseases: trafficking of gut immune cells to joint, liver and pancreas. In **Mucosal Immunology**, 4th edition, eds. Mestecky J, Strober W, Russel MW, Kelsall BL, Cheroutre H, Lambrecht BN. Academic Press, pp 1749-1758, 2015.

Salmi M, Jalkanen S. Endothelial adhesion molecules in the lymphatic vasculature. In **Encyclopedia of Immunobiology**, 1st edition, ed. Ratcliffe M. Academic Press, 2016.

**C) Patents (**Selected patents - US patents only)

Jalkanen S, Salmi M. Detection of vascular adhesion protein-1. (US patent 5,512.442, 1996)

Jalkanen S, Salmi M. Vascular adhesion protein-1 (VAP-1) and VAP-1 specific antibodies. (US patent 5,580.780, 1996)

Jalkanen S, Salmi M. Compositions and diagnostic methods using monoclonal antibodies against CD44v6. (US patent 5,616,468, 1997)

Jalkanen S, Salmi M. A method for antagonizing vascular-adhesion protein-1 (VAP-1)-mediated binding of

endothelial cells to lymphocytes. (US patent 6066321, 2000)

Irjala H, Jalkanen S, Salmi M. CLEVER-1 and uses thereof. (US patent 7354577, 2008)

Jalkanen S. Method for inducing an elevated level of adenosine in an individual. (US patent 7534423, 2009)

Jalkanen S. Method of ameliorating multi-organ failure resulting from ischemic reperfusion injury. (US patent 7727521, 2010)

Kivi E, Elima K, Jalkanen S. Peptides. (US patent 8138151, 2012)

Jalkanen S, Salmi M, Jalkanen M. Compositions useful especially for treatment or prevention of metabolic syndrome. (US patent 8119651, 2012)

Jalkanen S, Salmi M, Jalkanen M. Cell and therapeutical and diagnostical methods based thereon. (US patent 8722045, 2014)

Jalkanen S, Salmi M, Jalkanen M, Maksimow M. Biomarker for monitoring development of diseases and assessing the efficacy of therapies. (US patent 8975 081, 2015)