

PERSONAL INFORMATION

Pia Isomaki

WORK EXPERIENCE

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- 2016- Present **Chief Rheumatologist**
Centre for Rheumatology, Tampere University Hospital (Finland)
- September 1994-December 1994 **Registrar or Consultant in the Department of Internal Medicine**
Pori Central Hospital (Finland)
- July 1996-August 1996 **Registrar or Consultant in the Department of Internal Medicine**
Mikkeli Central Hospital (Finland)
- November 2000-January 2001 **Registrar or Consultant in the Department of Internal Medicine**
Vammala District Hospital (Finland)
- January 2001-August 2001 **Registrar or Consultant in the Department of Internal Medicine**
Hämeenlinna Central Hospital (Finland)
- August 2002-January 2016 **Registrar or Consultant in the Department of Internal Medicine**
Tampere University Hospital (Finland)
- April 1998-October 2000 **Postdoctoral Research Fellow**
The Kennedy Institute of Rheumatology, London (United Kingdom)
- 2002- Present **Project leader**
Tampere University, Faculty of Medicine and Health Technology (Finland)

EDUCATION AND TRAINING

-
- 1987- 1993 **MD**
Medical School, Turku University (Finland)
- 1993- 1997 **PhD**
Turku Graduate School of Biomedical Sciences (Finland)
- 2007 **Specialist in Rheumatology**
Tampere University Hospital (Finland)
- 2009 **Adjunct Professor in Immunology**
Tampere University (Finland)
- 2012 **Specialist in Internal Medicine**
Tampere University Hospital (Finland)

Expertise
Publications

Publications

42 peer-reviewed publications in international journals

Chapter 'Cytokines in rheumatoid arthritis' in the book 'Scientific basis of healthcare: Arthritis', Science Publishers, Great Britain, 2012

1. Roivainen A, Isomaki P, Nikkari S, Saario R, Vuori K, Toivanen P. Oncogene expression in synovial fluid cells in reactive and early rheumatoid arthritis: a brief report. *Br J Rheumatol* 34:805-8, 1995.
2. Isomaki P, Luukkainen R, Saario R, Toivanen P, Punnonen J. Interleukin-10 functions as an antiinflammatory cytokine in rheumatoid synovium. *Arthritis Rheum* 39:386-395, 1996.
3. Isomaki P, Soderstrom K-O, Punnonen J, Roivainen A, Luukkainen R, Merilahti-Palo R, Nikkari S, Lassila O, Toivanen P. Expression of bcl-2 in rheumatoid arthritis. *Br J Rheumatol* 35:611-619, 1996.
4. Isomaki P, Luukkainen R, Toivanen P, Punnonen J. The presence of interleukin-13 in rheumatoid synovium and its anti-inflammatory effects on synovial fluid macrophages from patients with rheumatoid arthritis. *Arthritis Rheum* 39:1693-1702, 1996.
5. Isomaki P, Aversa G, Cocks B, Luukkainen R, Saario R, Toivanen P, de Vries JE, Punnonen J. Increased expression of SLAM in patients with rheumatoid arthritis and its role in the regulation of cytokine production in rheumatoid synovium. *J Immunol* 159:2986-2993, 1997.
6. Isomaki P, Punnonen J. Pro- and anti-inflammatory cytokines in rheumatoid arthritis. *Ann Med* 29:499-507, 1997.
7. Mottonen M, Isomaki P, Saario R, Toivanen P, Punnonen J, Lassila O. Interleukin-10 inhibits the capacity of synovial macrophages to function as antigen-presenting cells. *Br J Rheumatol* 37:1207-1214, 1998.
8. Isomaki P, Aversa G, Chang J, Luukkainen R, Nikkari S, Toivanen P, de Vries JE, Punnonen J. Expression of soluble human signaling lymphocytic activation molecule in vivo. *J Allergy Clin Immunol* 103:114-118, 1999.
9. Isomaki P, Luukkainen R, Lassila O, Toivanen P, Punnonen J. Synovial fluid T cells from patients with rheumatoid arthritis are refractory to the T helper type 2 differentiation-inducing effects of IL-4. *Immunology* 96:358-364, 1999.
10. Simelyte E, Rimpilainen M, Rantakokko K, Lehtonen L, Zhang X, Aho H, Isomaki P, Toivanen P. Tissue distribution and persistence of arthritogenic and non-arthritogenic Eubacterium cell walls. *Clin Exp Rheumatol* 17:281-288, 1999.
11. Chen T, Isomaki P, Rimpilainen M, Toivanen P. Human cytokine responses induced by Gram-positive cell walls of normal intestinal microbiota. *Clin Exp Immunol* 118:261-267, 1999.
12. Hytonen J, Haataja S, Isomaki P, Finne J. Identification of a novel glycoprotein-binding activity in *Streptococcus pyogenes* regulated by the *mga* gene. *Microbiology* 146:31-39, 2000.
13. Mottonen M, Isomaki P, Luukkainen R, Toivanen P, Punnonen J, Lassila O. Interleukin-15 up-regulates the expression of CD154 on synovial fluid T cells. *Immunology* 100:238-244, 2000.
14. Simelyte E, Isomaki P, Rimpilainen M, Zhang X, Toivanen P. Cytokine production in arthritis susceptible and resistant rats: a study with arthritogenic and non-arthritogenic lactobacillus cell walls. *Scand J Immunol* 53:132-138, 2001.
15. Isomaki P, Panesar M, Annenkov A, Clark J, Foxwell B, Chernajovsky Y, Cope A. Prolonged exposure of T cells to TNF downregulates TCR and expression of the TCR/CD3 complex at the cell surface. *J Immunol* 166:5495-5507, 2001.
16. Kirchgessner H, Dietrich J, Scherer J, Isomaki P, Korinek V, Hilgert I, Bruyns E, Leo A, Cope A, Schraven B. The transmembrane adaptor protein TRIM regulates TCR-expression and TCR-mediated signaling via an association with the TCRchain. *J Exp Med* 193:1269-1283, 2001.
17. Mottonen M, Isomaki P, Luukkainen R, Lassila O. Regulation of CD154-induced interleukin-12 production in synovial fluid macrophages. *Arthritis Res* 4:R9, 2002 (online publication).
18. Isomaki P, Clark J, Vagenas P, Cope A. Exploring the signalling pathways promoting T cell effector responses in chronic inflammation. *Mod Rheumatol* 12:100-106, 2002.
19. Neva M, Isomaki P, Hannonen P, Kauppi M, Krishnan E, Sokka T. Early and extensive erosiveness in peripheral joints predicts atlantoaxial subluxations in patients with rheumatoid arthritis. *Arthritis Rheum* 48:1808-1813, 2003.

20. Clark J, Annenkov A, Panesar M, Isomaki P, Chernajovsky Y, Cope A. T cell receptor zeta reconstitution fails to restore responses of T cells rendered hyporesponsive by tumor necrosis factor alpha. *PNAS* 101:1696-701, 2004.
21. Mottonen M, Heikkinen J, Mustonen L, Isomaki P, Luukkainen R, Lassila O. CD4+CD25+ T cells with the phenotypic and functional characteristics of regulatory T cells are enriched in the synovial fluid of patients with rheumatoid arthritis. *Clin Exp Immunol* 140:360-7, 2005.
22. Isomaki P, Clark J, Panesar M, Cope A. Pathways of T cell activation and terminal differentiation in chronic inflammation. *Curr Drug Targets Inflamm Allergy* 4:287-93, 2005.
23. Zhang Z, Gorman CL, Vermi AC, Monaco C, Foey A, Owen S, Amjadi P, Vallance A, McClinton C, Marelli-Berg FM, Isomaki P, Russell A, Dazzi F, Vyse TJ, Brennan FM, Cope AP. TCRdim lymphocytes define populations of circulating effector cells that migrate to inflamed tissues. *Blood* 109:4328-4335, 2007.
24. Isomaki P, Alanara T, Isohanni P, Lagerstedt A, Korpela M, Moilanen T, Visakorpi T, Silvennoinen O. The expression of SOCS is altered in rheumatoid arthritis. *Rheumatology* 46:1538-46, 2007.
25. Virkki LM, Konttinen YT, Peltomaa R, Suontama K, Saario R, Immonen K, Jantti J, Tuomiranta T, Nykanen P, Hameenkorpi R, Heikkila S, Isomaki P, Nordstrom D. Cost-effectiveness of infliximab in the treatment of rheumatoid arthritis in clinical practice. *Clin Exp Rheumatol* 26:1059-1066, 2008.
26. Alanara T, Karstila K, Moilanen T, Silvennoinen O, Isomaki P. Expression of IL-10 family cytokines in rheumatoid arthritis: Elevated levels of IL-19 in the joints. *Scand J Rheumatol* 39:118-26, 2010.
27. Neva M, Hakkinen A, Isomaki P, Sokka T. Chronic back pain in patients with rheumatoid arthritis and in a control population: prevalence and disability - a five-year follow-up. *Rheumatology* 50:1635-9, 2011.
28. Fashe T, Saarikettu J, Isomaki P, Yang J, Silvennoinen O. Expression analysis of TUDOR-SN protein in mouse tissues. *Tissue Cell* 45:21-31, 2013.
29. Isomaki P, Junttila I, Vidqvist K-L, Korpela M, Silvennoinen O. The activity of JAK-STAT pathways in rheumatoid arthritis: constitutive activation of STAT3 correlates with interleukin 6 levels. *Rheumatol* 54:1103-13; 2015.
30. Pertovaara M, Silvennoinen O, Isomaki P. STAT-5 is activated constitutively in T cells, B cells and monocytes from patients with primary Sjogren's syndrome. *Clin Exp Immunol* 181:29-38, 2015.
31. Pertovaara M, Silvennoinen O, Isomaki P. Cytokine-induced STAT1 activation is increased in patients with primary Sjogren's syndrome. *Clin Immunol* 165:60-7, 2016.
32. Aaltonen K, Joensuu J, Pirila L, Kauppi M, Uutela T, Varjolahti-Lehtinen T, Yli-Kerttula T, Isomaki P, Nordstrom D, Sokka T. Drug survival on tumour necrosis factor inhibitors in patients with rheumatoid arthritis in Finland. *Scand J Rheumatol* 46:359-63, 2017
33. Aaltonen K, Ylikyla S, Joensuu J, Isomaki P, Pirila L, Kauppi M, Rannio T, Eklund K, Blom M, Nordstrom D. Efficacy and effectiveness of tumor necrosis factor-inhibitors in the treatment of rheumatoid arthritis with a comparison between randomized controlled trials and routine clinical practice - a prospective cohort study. *Rheumatology* 56:725-35, 2017.
34. Rannio T, Asikainen J, Hannonen P, Yli-Kerttula T, Ekman P, Pirila L, Kuusalo L, Mali M, Puurtinen-Vilkki M, Kortelainen S, Paltta J, Taimen K, Kauppi M, Laiho K, Nyrhinen S, Makinen H, Isomaki P, Uotila T, Aaltonen K, Kautiainen H, Sokka T. Three out of four disease-modifying anti-rheumatic drug-naive rheumatoid arthritis patients meet 28-joint disease activity score remission at 12 months: results from the FIN-ERA cohort. *Scand J Rheumatol* 46:425-31, 2017.
35. Ranta N, Valli A, Gronholm A, Silvennoinen O, Isomaki P, Pesu M, Pertovaara M. Proprotein convertase enzyme FURIN is upregulated in primary Sjogren's syndrome. *Clin Exp Rheumatol* 2018 (Epub ahead of print)
36. Valli A, Ranta N, Gronholm A, Silvennoinen O, Pesu M, Isomaki P. Increased expression of the proprotein convertase enzyme FURIN in rheumatoid arthritis. *Scand J Rheumatol* 48:173-7, 2019.

37. Palmroth M, Viskari H, Seppanen M, Keskitalo S, Virtanen A, Varjosalo M, Silvennoinen O, Isomaki P. IRF2BP2 mutation is associated with increased STAT1 and STAT5 activation in two family members with inflammatory conditions and lymphopenia. *Pharmaceutics* 14:797-808, 2021.
38. Paltta J, Heikkila H, Pirila L, Eklund K, Huhtakangas J, Isomaki P, Kaipiainen-Seppanen O, Kristiansson K, Havulinna A, Sokka-Isler T, Palomaki A, for FinnGen investigators. The validity of rheumatoid arthritis diagnoses in Finnish biobanks. *Scand J Rheumatol*, 2021, Oct 13:1-9, Online ahead of print

39. Palmroth M, Kuuliala K, Peltomaa R, Virtanen A, Kuuliala A, Kurttila A, Kinnunen A, Leirisalo-Repo M, Silvennoinen O, Isomaki P. Tofacitinib suppresses several JAK-STAT pathways in rheumatoid arthritis in vivo and baseline signaling profile associates with treatment response. *Front Immunol* 12: 738481, 2021.
40. Immunogenicity of subcutaneous TNF inhibitors and its clinical significance in real-life setting in patients with spondyloarthritis. Hiltunen J, Parmanne P, Sokka T, Lamberg T, Isomaki P, Kaipiainen-Seppanen O, Peltomaa R, Uutela T, Pirila L, Taimen K, Kauppi MJ, Yli-Kerttula T, Tuompo R, Relas H, Kortelainen S, Paalanen K, Asikainen J, Ekman P, Santisteban A, Vidqvist KL, Tadesse K, Romu M, Borodina J, Elfving P, Valleala H, Leirisalo-Repo M, Rantalaiho V, Kautiainen H, Jokiranta TS, Eklund KK; FinADASpA Study Group. *Rheumatol Int.* 42:1015-1025, 2022.
41. Lamberg T, Sipponen T, Valtanen S, Eklund K, Malkonen T, Aalto K, Mikola K, Kolho K, Leinonen S, Isomaki P, Makinen H, Vidqvist K, Kokko A, Huilaja L, Kyllonen M, Keskitalo P, Sard S, Vahasalo P, Koskela R, Kroger L, Lahtinen P, Haapala A, Korkatti K, Sokka-Isler T, Jokiranta T. Short interruptions of TNF-inhibitor treatment can be associated with treatment failure in patients with immune-mediated diseases. *Autoimmunity* 55:275-284, 2022
42. Toivonen L, Neva M, Sioris T, Isomaki P, Metso S. Gorham-Stout disease with life-threatening pleural effusion treated with a pleuro-peritoneal shunt: a case report. *Endocrinol Diabetes Metab Case Rep*, 2022 Jun 1, 2022:21-0101, Online ahead of print

Projects

Memberships

Memberships in societies
The Finnish Society for Rheumatology
The Finnish Society for Immunology
The Finnish Society for Internal Medicine

Other Relevant Information

Positions of trust
President of the Finnish Society for Rheumatology 2019-2020
Board member of the Finnish Society for Rheumatology 2004-2008, 2018-2021
Chair of the Educational committee of the Finnish Society for Rheumatology 2018 - present
Head of The Finnish Coordination Center for Rheumatic Diseases 2018 - present