

CURRICULUM VITAE



Affiliation: Hematology Research Unit Helsinki (HRUH), University of Helsinki (UH) and Helsinki University Hospital (HUCH) Comprehensive Cancer Center (www.helsinki.fi/hematology)

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Date of birth: 08.01.1972

Education: 1997 MD, University of Helsinki, Finland (first degree, not equivalent for PhD)
2001 PhD, University of Helsinki, Finland, PhD Thesis with honor
2007 Specialist in Clinical Chemistry (Laboratory Hematology), Univ. of Helsinki, Finland
2011 Adjunct professor (docent), Experimental hematology, Univ. of Helsinki
2017 Professor of Translational Hematology, University of Helsinki

Current positions:

- 2017- Professor of Translational Hematology, Univ. of Helsinki, Finland (since 9/2017)
- 2012- Specialist doctor (5% position), HUCH Comprehensive Cancer Center, Helsinki Finland

Previous positions:

- 2015-2017 Research professor for the Finnish Cancer Institute
- 2015-2017 Deputy professor of Clinical Chemistry and Hematology (35% position), UH, Finland
- 2010-2014 Senior Research fellow (Academy of Finland), HRUH, HUCH, Helsinki, Finland
- 2008-2010 Academy Clinical Researcher, HRUH, HUCH, Helsinki, Finland,
- 2007-2007 Resident in hematology, Dept. of Medicine, HUCH, Helsinki, Finland (4 months)
- 2006-2006 Clinical lecturer, Dept. of Clinical Chemistry, University of Helsinki, Finland (6 months)
- 2002-2006 Resident in Clinical Chemistry, Laboratory of Hematology, HUCH, Helsinki, Finland
- 2001-2002 Post-Doctoral researcher, Molecular Cancer Biology (Group prof. K. Alitalo), UH (12 months)
- 1995-2000 PhD student, Dept. of Virology (Cancer biology group prof. A. Vaheri), UH, Finland
- Career breaks: 2 children born in 2002 and 2004

Fellowships and awards

- Nomination for the Helsinki Institute of Life Science (HiLife) Fellow group for years 2017-2020
- 2015 ERC (European Research Council) consolidator grant, 2 047 000 eur
- 2014 Instrumentarium Science foundation fellow award (100 000 eur)
- 2014 Nomination for the Biocentrum Helsinki research group for years 2014-2016
- 2010-2015 Senior research fellowship of the Academy of Finland
- 2008-2010 Clinical researcher fellowship from the Academy of Finland

Merits in teaching and pedagogical competence

- *Deputy prof. in Clinical Chemistry and Hematology* responsible for undergraduate studies (medicine) and specialist doctor training in the Univ. of Helsinki, Finland, 1.3.2015- (Curriculum, planning of the tuition, lecturing, educational materials)
- *Board member in the Doctoral program* in clinical research (Univ. of Helsinki) 2013- (Curriculum, educational administration)
- *Lecturer* in courses associated to Helsinki Biomedical Graduate school and to Specialist training in Internal Medicine and Clinical Chemistry 2010- (topics: Flow cytometry, scientific writing, laboratory hematology)

- *Invited lecturer* in the educational sessions in the international conferences (2013-2016)
- *Doctor assistant and clinical lecturer*, Department of Clinical Chemistry, University of Helsinki, Finland 1.8.2006-31.1.2007 (Planning of courses, lecturing, seminars, devising exams)
- *Thesis committee member* for 10 PhD students 2010-

Supervision

- *Supervisor in PhD thesis*: PhD A. Kreutzman (2012, thesis with honor, "Antileukemic immune responses in CML"), PhD S. Hernesniemi (2012, "Aberrant kinase activation as a therapy target: CML as a model disease"), MD, PhD H. Rajala (2014, best thesis of the year, "Molecular pathogenesis of LGL leukemia"), PhD M. Ilander (2016, "T and NK cell mediated immunity in CML"), PhD E. Andersson (2017, "Characterization of mature T-cell leukemias by next-generation sequencing and drug sensitivity testing"), PhD P. Pietarinen (2017, "Effects of genotype and phenotype in personalized drug therapy"), MD, PhD M. El Missiry (2017, "Early Treatment Prediction and Immunological Effects of TKI Therapy in CML"), MD, PhD S. Söderlund (2017, "Clinical and Immunological studies in CML"). Currently ongoing 13 PhD thesis supervisions.
- *Supervisor in MSc and MD thesis*: MSc M. Ilander (2011), MSc E. Andersson (2012), MD K. Penttinen (2012), MSc S. Bortoluzzi (2015), MD E. Vakkila (2016), MD J. Eskelinen (2016), V. Gasparini 2016 (Univ. of Padua, Italy), M. Lee (2017).
- *Supervisor in Post-Doc studies*: PhD Can Hekim (2012-2014), PhD Tiina Kelkka (2013-), PhD Giljun Park (2015-), PhD Anna Kreutzman (2015-), MD PhD Mikko Keränen (2015-), MD PhD Hanna Rajala (2016-), PhD Bhagwan Yadav (2017-)

Commissions of trust

- Member of the American Society of Hematology (ASH) scientific committee (myeloid neoplasia 2016-)
- Board member of the Nordic CML study group 2010- and of the Finnish Soc. of Hematol. 2006-2010
- Board member in the doctoral program of Clinical Investigation, University of Helsinki, Finland 2013-
- Member of the Editorial Board: International Trends in Immunity (2013-), Cytokine (2014-)
- Referee in international journals (hematology and immunology) and international peer evaluation of funding applications
- Abstract reviewer for the EHA and ASH conferences (2011, 2013, 2014, 2016)
- Pre-examiner of a Doctoral dissertation 3 times (2014, 2015, 2016)
- External international expert in EU funded project: Innovation of Microscope Morphology Education in Hematology Using Internet Virtual Interactive Method (CZ.1.07/2.2.00/07.0294), 2008-2010.
- Principal investigator or study steering group member in international clinical studies run in European countries (www.clinicaltrials.gov, NCT01725204, NCT00852566 and NCT01596114) 2009-
- PI in 6 international biomarker discovery programs in association with clinical drug studies run in European countries 2009-
- Sub-investigator in 24 international clinical studies in hematological malignancies using novel targeted drugs 2007-
- Memberships in professional societies:
 - Finnish Medical Association, 1993-
 - Finnish Society of Hematology, 2002-
 - The American Society of Hematology, 2008-
 - The European Society of Hematology, 2008-

Bibliometrics (Web of Science)

Total citations: 2923

Citations/article: 32.5

H-index: 24

Total number of publications:

Altogether, 104 publications which consist of 90 original research journal articles, 12 review articles, 1 chapter in research books and 1 conference proceedings article all of which are published in peer-reviewed scientific journals.

Link to the full publication list: <http://www.ncbi.nlm.nih.gov/pubmed/?term=mustjoki>

PUBLICATION LIST

10 selected publications during the last 5 years (full publication list: <https://www.ncbi.nlm.nih.gov/pubmed/?term=mustjoki>)

Articles related to LGL leukemia, JAK-STAT pathway, and RA:

1. Koskela HL, Eldfors S, Ellonen P, van Adrichem AJ, Kuusanmaki H, Andersson EI, Lagstrom S, Clemente MJ, Olson T, Jalkanen SE, Majumder MM, Almusa H, Edgren H, Lepisto M, Mattila P, Guinta K, Koistinen P, Kuittinen T, Penttinen K, Parsons A, Knowles J, Saarela J, Wennerberg K, Kallioniemi O, Porkka K, Loughran TP, Jr., Heckman CA, Maciejewski JP, **Mustjoki S**. Somatic STAT3 mutations in large granular lymphocytic leukemia. **N Engl J Med** 2012;366:1905-13. (Groundbreaking observation demonstrating that LGL leukemia is caused by activating STAT3 mutations. Corresponding author)
IF 72.406, JR 1/155 Medicine, cited 261 times.
2. Rajala HL, Eldfors S, Kuusanmaki H, van Adrichem AJ, Olson T, Lagstrom S, Andersson EI, Jerez A, Clemente MJ, Yan Y, Zhang D, Awwad A, Ellonen P, Kallioniemi O, Wennerberg K, Porkka K, Maciejewski JP, Loughran TP, Jr., Heckman C, **Mustjoki S**. Discovery of somatic STAT5b mutations in large granular lymphocytic leukemia. **Blood** 2013;121:4541-4550. (This was the first time to discover somatic mutations in STAT5 gene. Senior, corresponding author responsible for the whole study).
IF 13.164, JR 2/70 Hematology, cited 86 times
3. Flanagan, S.E., Haapaniemi, E., Russell, M.A., Caswell, R., Lango Allen, H., De Franco, E., McDonald, T.J., Rajala, H., Ramelius, A., Barton, J., Heiskanen, K., Heiskanen-Kosma, T., Kajosaari, M., Murphy, N.P., Milenkovic, T., Seppanen, M., Lernmark, A., **Mustjoki, S.**, Otonkoski, T., Kere, J., Morgan, N.G., Ellard, S. & Hattersley, A.T. Activating germline mutations in STAT3 cause early-onset multi-organ autoimmune disease. **Nature Gen** 2014;46:812-814. (Discovery of novel germline STAT3 mutations in patients with multi-organ autoimmune disease)
IF 27.959, JR 2/167 Genetics&heredity, cited 104 times
4. Andersson E, Tanahashi T, Sekiguchi N, Gasparini V, Bortoluzzi S, Matsuda K, Mitsui T, Eldfors S, Bortoluzzi S, Coppe A, Binatti A, Lagsrtom S, Ellonen P, Fukushima N, Nishina S, Senoo N, Sakai H, Nakazawa H, Kwong Y-L, Loughran TP, Maciejewski JP, **Mustjoki S***, Ishida F*. *equal senior authors. High incidence of activating STAT5B mutations in CD4-positive T-cell large granular lymphocyte leukemia. **Blood** 2016 Nov 17;128(20):2465-2468. (Association of STAT5b mutations with CD4+ phenotype in LGL leukemia)
IF 13.164, JR 2/70 Hematology, cited 9 times.
5. Savola P*, Kelkka T*, Rajala H, Kuuliala A, Kuuliala K, Eldfors S, Ellonen P, Lagstrom S, Lepisto M, Hannunen T, Andersson EI, Khajuria RK, Jaatinen T, Koivuniemi R, Repo H, Saarela J, Porkka K**, Leirisalo-Repo M**, **Mustjoki S****. **,***Equal contribution. Somatic mutations in clonally expanded cytotoxic T lymphocytes in patients with newly diagnosed rheumatoid arthritis. **Nat Commun**. 2017;8:15869. (Seminal

discovery of clonal expansions carrying somatic mutations in patients with newly diagnosed rheumatoid arthritis)

IF 12.124, JR 3/64 Multidisciplinary Sciences

Articles related to tumor immunology and biomarkers:

6. Thielen, N., Richter, J., Baldauf, M., Barbany, G., Fioretos, T., Giles, F., Gjertsen, B.T., Hochhaus, A., Jan Schuurhuis, G., Sopper, S., Stenke, L., Thunberg, S., Wolf, D., Ossenkoppele, G., Porkka, K., Janssen, J., **Mustjoki, S.** Leukemic stem cell quantification in newly diagnosed chronic myeloid leukemia patients predicts response to nilotinib therapy. **Clin Cancer Res** 2016;15;22(16):4030-8. (Biomarker study in multicenter international clinical trial analyzing the effect of leukemic stem cells to therapy response. Coordinator of the project in Nordic and Central European countries. **IF 9.619, JR 12/217** Oncology.
7. Hekim C, Ilander M, Yan J, Michaud E, Smykla R, Vähä-Koskela M, Savola P, Tähtinen S, Saikko L, Hemminki A, Kovanen PE, Porkka K, Lee FY, **Mustjoki S.** Dasatinib Changes Immune Cell Profiles Concomitant with Reduced Tumor Growth in Several Murine Solid Tumor Models. **Cancer Immunol Res.** 2017 Feb;5(2):157-169. (Discovery of beneficial immunomodulatory effects of dasatinib in murine solid tumor models).
8. Sopper S, **Mustjoki S**, White D, Hughes T, Valent P, Burchert A, Gjertsen BT, Gastl G, Baldauf M, Trajanoski Z, Giles F, Hochhaus A, Ernst T, Schenk T, Janssen JJ, Ossenkoppele GJ, Porkka K, Wolf D. Reduced CD62L expression on T cells and increased soluble CD62L levels predict molecular response to tyrosine kinase inhibitor (TKI) therapy in early Chronic Phase Chronic Myelogenous Leukemia (CML-CP). **J Clin Oncol.** 2017;35(2):175-184. (Characterization of immunological changes during targeted kinase inhibitor therapy and their correlation with therapy response. Pan-European collaboration in clinical trial.) **IF 20.982, JR 5/213** Oncology, cited 4 times.
9. Andersson EI, Putzer S, Yadav B, Dufva O, Khan S, He L, Sellner L, Schrader A, Crispatzu G, Oles M, Zhang H, Adnan S, Lagstrom S, Bellanger D, Mpindi JP, Eldfors S, Pemovska T, Pietarinen P, Lauhio A, Tomska K, Cuesta-Mateos C, Faber E, Koschmieder S, Brummendorf TH, Kytola S, Savolainen ER, Siitonen T, Ellonen P, Kallioniemi O, Wennerberg K, Ding W, Stern MH, Huber W, Anders S, Tang J, Aittokallio T, Zenz T, Herling M, **Mustjoki S.** Discovery of novel drug sensitivities in T-PLL by high-throughput ex vivo drug testing and mutation profiling. **Leukemia.** 2017. **IF 11.702, JR 3/70** Hematology
10. Ilander M, Olsson-Stromberg U, Schlums H, Guilhot J, Bruck O, Lahteenmaki H, Kasanen T, Koskenvesa P, Soderlund S, Hoglund M, Markevarn B, Sjalander A, Lotfi K, Dreimane A, Lubking A, Holm E, Bjoreman M, Lehmann S, Stenke L, Ohm L, Gedde-Dahl T, Majeed W, Ehrencrona H, Koskela S, Saussele S, Mahon FX, Porkka K, Hjorth-Hansen H, Bryceson YT, Richter J, **Mustjoki S.** Increased proportion of mature NK cells is associated with successful imatinib discontinuation in chronic myeloid leukemia. **Leukemia.** 2017;31(5):1108-1116. (Discovery of immunological biomarker for successful therapy discontinuation in leukemia patients. Pan-European collaboration in clinical trial. PI of the study) **IF 11.702, JR 3/70** Hematology, cited 9 times.