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Description of research and teaching

My current work at FIMM is focused on understanding the mechanisms of pathogenesis and drug resistance in hematological malignancies, more specifically in multiple myeloma (MM) and acute myeloid leukemia (AML). This research requires the combination of high throughput drug sensitivity and resistance testing, NGS, and quantitative proteomics. Aims of the work are to identify new treatment strategies for patients with recurrent disease, identify new biomarkers for treatment response, and to develop new methods for patient stratification.

Qualifications

Biochemistry, Doctor of Philosophy, Faculty of Biological and Environmental Sciences
1 Jan 2009 → 23 Jan 2015
Award Date: 23 Jan 2015

Biochemistry, Master of Science, Faculty of Biological and Environmental Sciences
1 Aug 2003 → 18 Jun 2008
Award Date: 18 Jun 2008

PhD student / Research scientist, Institute of Biotechnology
15 Sep 2008 → 30 Apr 2015

Undergraduate student / Research assistant
1 Jun 2003 → 1 Aug 2007

University studies in biology and biochemistry, University of Eastern Finland (UEF)
15 Aug 2000 → 31 Jul 2003

Publications

CKS1 inhibition depletes leukemic stem cells and protects healthy hematopoietic stem cells in acute myeloid leukemia
Grey, W., Rio-Machin, A., Casado, P., Gronroos, E., Ali, S., Miettinen, J. J., Bewicke-Copley, F., Parsons, A., Heckman, C. A., Swanton, C., Cutillas, P. R., Gribben, J., Fitzgibbon, J. & Bonnet, D., 22 Jun 2022, In: Science translational medicine. 14, 650, 14 p., 3248.

Growth Response and Differentiation of Bone Marrow-Derived Mesenchymal Stem/Stromal Cells in the Presence of Novel Multiple Myeloma Drug Melflufen

Gebraad, A., Ohlsbom, R., Miettinen, J. J., Emeh, P., Pakarinen, T-K., Manninen, M., Eskelinen, A., Kuismanen, K., Slipicevic, A., Lehmann, F., Nupponen, N. N., Heckman, C. A. & Miettinen, S., May 2022, In: Cells. 11, 9, 22 p., 1574.

The Peptide–Drug Conjugate Melflufen Modulates the Unfolded Protein Response of Multiple Myeloma and Amyloidogenic Plasma Cells and Induces Cell Death

Flanagan, K., Kumari, R., Miettinen, J., Haney, S. L., Varney, M. L., Williams, J. T., Majumder, M. M., Suvela, M., Slipicevic, A., Lehmann, F., Nupponen, N. N., Holstein, S. A. & Heckman, C., Mar 2022, In: Hemasphere. 6, 3, p. e687 9 p., 687.

Identification of Protein Biomarker Signatures for Acute Myeloid Leukemia (AML) Using Both Nontargeted and Targeted Approaches

Dowling, P., Tierney, C., Dunphy, K., Miettinen, J. J., Heckman, C. A., Bazou, D. & O’Gorman, P., Dec 2021, In: Proteomes. 9, 4, 20 p., 42.

Heterogeneous modulation of Bcl-2 family members and drug efflux mediate MCL-1 inhibitor resistance in multiple myeloma

Bolomsky, A., Miettinen, J. J., Malyutina, A., Besse, A., Huber, J., Fellingner, S., Breid, H., Parsons, A., Klavins, K., Hannich, J. T., Kubicek, S., Caers, J., Hübl, W., Schreder, M., Zojer, N., Driessen, C., Tang, J., Besse, L., Heckman, C. & Ludwig, H., 26 Oct 2021, In: *Blood advances*. 5, 20, p. 4125-4139 15 p.

S100 Calcium Binding Protein Family Members Associate With Poor Patient Outcome and Response to Proteasome Inhibition in Multiple Myeloma

Liu, M., Wang, Y., Miettinen, J. J., Kumari, R., Majumder, M. M., Tierney, C., Bazou, D., Parsons, A., Suvela, M., Lievonen, J., Silvennoinen, R., Anttila, P., Dowling, P., O'Gorman, P., Tang, J. & Heckman, C. A., 16 Aug 2021, In: *Frontiers in Cell and Developmental Biology*. 9, 14 p., 723016.

Aminopeptidase Expression in Multiple Myeloma Associates with Disease Progression and Sensitivity to Melflufen

Miettinen, J., Kumari, R., Traustadottir, G. A., Huppunen, M-E. A., Sergeev, P., Majumder, M. M., Schepsky, A., Gudjonsson, T., Lievonen, J., Bazou, D., Dowling, P., O'Gorman, P., Slipicevic, A., Anttila, P., Silvennoinen, R., Nupponen, N. N., Lehmann, F. & Heckman, C., Apr 2021, In: *Cancers*. 13, 7, 21 p., 1527.

Integration of Deep Multi-Omics Profiling Veals New Insights into the Biology of Poor-Risk Acute Myeloid Leukemia

Rio-Machin, A., Casado-Izquierdo, P., Miettinen, J., Bewicke-Copley, F., Khan, N., Demeulemeester, J., Krizsán, S., Zheng, J., Middleton, C., Yin, W., Grey, W., Miraki-Moud, F., Matthews, J., Grantham, M., Rouault-Pierre, K., Wennerberg, K., Parsons, A. O., Armes, H., Close, K. E. M., Di Bella, D. & 12 others, Cavenagh, J., Freeman, S. D., Van Loo, P., Bödör, C., Porkka, K., Heckman, C., Wang, J., Taussig, D., Bonnet, D., Cazier, J-B., Cutillas, P. R. & Fitzgibbon, J., 5 Nov 2020, p. 39-40. 1 p.

HSV-1 ICP27 targets the TBK1-activated STING signaling to inhibit virus-induced type I IFN expression

Christensen, M. H., Jensen, S. B., Miettinen, J. J., Luecke, S., Prabakaran, T., Reinert, L. S., Mettenleiter, T., Chen, Z. J., Knipe, D. M., Sandri-Goldin, R. M., Enquist, L. W., Hartmann, R., Mogensen, T. H., Rice, S. A., Nyman, T. A., Matikainen, S. & Paludan, S. R., 27 Jul 2016, In: *EMBO Journal*. 2016, 35, p. 1385-1399 15 p.

Monosodium Urate Activates Src/Pyk2/PI3 Kinase and Cathepsin Dependent Unconventional Protein Secretion From Human Primary Macrophages

Välimäki, E., Miettinen, J. J., Lietzen, N., Matikainen, S. & Nyman, T. A., Mar 2013, In: *Molecular & Cellular Proteomics*. 12, 3, p. 749-763 15 p.

Global Secretome Characterization of Herpes Simplex Virus 1-Infected Human Primary Macrophages

Miettinen, J. J., Matikainen, S. & Nyman, T. A., Dec 2012, In: *Journal of Virology*. 86, 23, p. 12770-12778 9 p.

Claudin-like protein 24 interacts with the VEGFR-2 and VEGFR-3 pathways and regulates lymphatic vessel development

Saharinen, P. I., Heloterä, H., Miettinen, J., Norrmen, C., D Amico Lago, G. V., Jeltsch, M., Langenberg, T., Vandevelde, W., Ny, A., Dewerchin, M., Carmeliet, P. & Alitalo, K., 2010, In: *Genes & Development*. 24, 9, p. 875-880 6 p.

Angiopoietins assemble distinct Tie2 signalling complexes in endothelial cell-cell and cell-matrix contacts

Saharinen, P., Eklund, L., Miettinen, J., Wirkkala, R., Anisimov, A., Winderlich, M., Nottebaum, A., Vestweber, D., Deutsch, U., Koh, G. Y., Olsen, B. R. & Alitalo, K., 2008, In: *Nature Cell Biology*. 10, 5, p. 527-537 11 p.

Activities

24th European Hematology Association (EHA) Congress

Juho Miettinen (Attendee)
13 Jun 2019 → 16 Jun 2019

23rd European Hematology Association Congress

Juho Miettinen (Attendee)
14 Jun 2018 → 17 Jun 2018

European Hematology Association (External organisation)

Juho Miettinen (Member)
2018 → ...

8th Annual Network Meeting of the Nordic EMBL Partnership for Molecular Medicine: Main Meeting

Juho Miettinen (Attendee)

6 Sep 2017 → 7 Sep 2017

FIMM Annual Scientific Retreat 2017

Juho Miettinen (Member of organizing committee)

8 Jun 2017 → 9 Jun 2017

Helsinki Hematology Day 2017

Juho Miettinen (Attendee)

16 Feb 2017

Euroconference on Angiogenesis

Juho Miettinen (Attendee)

21 May 2004 → 24 May 2004