

BRUK AV BIOBANKENS MATERIALE FRA OPPRETTELSEN I 2015 OG FRAM TIL OG MED APRIL 2020

DOKTORGRADSAVHANDLINGER BASERT PÅ MATERIALE FRA BIOBANKEN

Elise Aasebø. Mass spectrometry-based proteome quantification in leukemic cells from acute myeloid leukemia patients. Avhandling for PhD graden ved Universitetet i Bergen 2016.

Ina Nepstad. The PI3K-Akt-mTOR intracellular signaling pathway in human acute myeloid leukemia. Avhandling for PhD graden ved Universitetet i Bergen, 2019.

Caroline Benedicte Nitter Engen. Exploring the boundaries of precision haemato-oncology - The case of FLT3 length mutated acute myeloid leukaemia. Avhandling for PhD graden ved Universitetet i Bergen 2020.

Ida Sofie Grønningsæter. Therapeutic and prognostic implications of metabolism in acute myeloid leukemia. Avhandling for PhD graden ved Universitetet i Bergen 2020.

Tor Henrik Anderson Tvedt. The role of interleukin-6 classical and trans-signaling in allogeneic stem cell transplantation. Avhandling for PhD graden ved Universitetet i Bergen 2020.

Ida Marie Rundgren. The monocyte system in hematological malignancies. Avhandling for PhD graden ved Universitetet i Bergen 2020.

VITENSKAPELIGE ARTIKLER BASERT PÅ MATERIALE FRA BIOBANKEN

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2015

1. Reikvam H, Rynningen A, Sæterdal LR, Nepstad I, Foss B, Bruserud Ø. Connexin expression in human acute myeloid leukemia cells: identification of patient subsets based on protein and global gene expression profiles. *Int J Mol Med* 2015; 35: 645-52.
2. Bruserud Ø, Reikvam H, Fredly H, Skavland J, Hagen KM, van Hoang TT, Brenner AK, Kadi A, Astori A, Gjertsen BT, Pendino F. Expression of the potential therapeutic target CXXC5 in primary acute myeloid leukemia cells – high expression is associated with adverse prognosis as well as altered intracellular signaling and transcriptional regulation. *Oncotarget* 2015; 6: 2794-811.

3. Tvedt TH, Rye KP, Reikvam H, Brenner AK, Bruserud Ø. The importance of sample collection when using single cytokine levels and systemic cytokine profiles as biomarkers--a comparative study of serum versus plasma samples. *J Immunol Methods* 2015; 418:19-28.
4. Ersvaer E, Brenner AK, Vetås K, Reikvam H, Bruserud Ø. Effects of cytarabine on activation of human T cells - cytarabine has concentration-dependent effects that are modulated both by valproic acid and all-trans retinoic acid. *BMC Pharmacol Toxicol* 2015; 16:12).
5. Kittang AO, Kordasti S, Sand KE, Costantini B, Kramer AM, Perezabellan P, Seidl T, Rye KP, Hagen KM, Kulasekararaj A, *Bruserud Ø,*Mufti GJ. Expansion of myeloid derived suppressor cells correlates with number of T regulatory cells and disease progression in myelodysplastic syndrome. *Oncoimmunology* 2015; 5:e1062208 (*shared last authorship).
6. Reikvam H, Brenner AK, Hagen KM, Liseth K, Skrede S, Hatfield KJ, Bruserud Ø. The cytokine-mediated crosstalk between primary human acute myeloid cells and mesenchymal stem cells alters the local cytokine network and the global gene expression profile of the mesenchymal cells. *Stem Cell Res* 2015, 25;15, 530-541.
7. Reikvam H, Grønningsæter IS, Ahmed AB, Hatfield K, Bruserud Ø. Metabolic Serum Profiles for Patients Receiving Allogeneic Stem Cell Transplantation: The Pretransplant Profile Differs for Patients with and without Posttransplant Capillary Leak Syndrome. *Dis Markers* 2015; 2015:943430.
8. Kittang AO, Kordasti S, Sand KE, Costantini B, Kramer AM, Perezabellan P, Seidl T, Rye KP, Hagen KM, Kulasekararaj A, Bruserud Ø, Mufti GJ. Expansion of myeloid derived suppressor cells correlates with number of T regulatory cells and disease progression in myelodysplastic syndrome. *Oncoimmunology* 2015 Jun 24;5(2):e1062208.

2016

9. Reikvam H, Hatfield K, Bruserud Ø. The pretransplant systemic metabolic profile reflects a risk of acute graft versus host disease after allogeneic stem cell transplantation. *Metabolomics* 2016; 12: 12.
10. Sand K, Theorell J, Bruserud Ø, Bryceson YT, Kittang AO. Reduced potency of cytotoxic T lymphocytes from patients with high-risk myelodysplastic syndromes. *Cancer Immunol Immunother* 2016; 65: 1135-47.
11. Melve GK, Ersvaer E, Akkök ÇA, Ahmed AB, Kristoffersen EK, Hervig T, Bruserud Ø. Immunomodulation Induced by Stem Cell Mobilization and Harvesting in Healthy Donors: Increased Systemic Osteopontin Levels after Treatment with Granulocyte Colony-Stimulating Factor. *Int J Mol Sci.* 2016 Jul 19;17(7). pii: E1158. doi: 10.3390/ijms17071158.
12. Kittang AO, Sand K, Brenner AK, Rye KP, Bruserud Ø. The Systemic Profile of Soluble Immune Mediators in Patients with Myelodysplastic Syndromes. *Int J Mol Sci.* 2016 Jul 5;17(7). pii: E1080. doi: 10.3390/ijms17071080.
13. Hernandez-Valladares M, Aasebø E, Mjaavatten O, Vaudel M, Bruserud Ø, Berven F, Selheim F. Reliable FASP-based procedures for optimal quantitative proteomic and phosphoproteomic analysis on samples from acute myeloid leukemia patients. *Biol Proced Online.* 2016 18:13. doi: 10.1186/s12575-016-0043-0. eCollection 2016.
14. Brenner AK, Reikvam H, Bruserud Ø. A Subset of Patients with Acute Myeloid Leukemia Has Leukemia Cells Characterized by Chemokine Responsiveness and Altered Expression of Transcriptional as well as Angiogenic Regulators. *Front Immunol* 2016; 7:205. doi: 10.3389/fimmu.2016.00205. eCollection 2016.
15. Aasebø E, Mjaavatten O, Vaudel M, Farag Y, Selheim F, Berven F, Bruserud Ø, Hernandez-Valladares M. Freezing effects on the acute myeloid leukemia cell proteome and phosphoproteome revealed using optimal quantitative workflows. *J Proteomics* 2016; 145:214-25.

16. Leitch C, Osdal T, Andresen V, Molland M, Kristiansen S, Nguyen XN, Bruserud Ø, Gjertsen BT, McCormack E. Hydroxyurea synergizes with valproic acid in wild-type p53 acute myeloid leukaemia. *Oncotarget* 2016; 7: 8105-18.
17. Andresen V, Erikstein BS, Mukherjee H, Sulen A, Popa M, Sørnes S, Reikvam H, Chan KP, Hovland R, McCormack E, Bruserud Ø, Myers AG, Gjertsen BT. Anti-proliferative activity of the NPM1 interacting natural product avrainvillamide in acute myeloid leukemia. *Cell Death Dis* 2016 ; 7: e2497 doi: 10.1038/cddis.2016.392. PubMed PMID: 27906185.
18. Tvedt TH, Lie SA, Reikvam H, Rye KP, Lindås R, Gedde-Dahl T, Ahmed AB, Bruserud Ø. Pretransplant Levels of CRP and Interleukin-6 Family Cytokines; Effects on Outcome after Allogeneic Stem Cell Transplantation. *Int J Mol Sci* 2016; 17. pii: E1823.

2017

19. Hatfield KJ, Melve GK, Bruserud Ø. Granulocyte colony-stimulating factor alters the systemic metabolomic profile in healthy donors. *Metabolomics* 2017;13(1):2.
20. Wendelbo Ø, Netland Opheim E, Felli Lunde TH, Bruserud Ø, Hervig T, Reikvam H. A prospective observational study on effects of fever on red cell transfusion outcome. *Vox Sang.* 2017 May 18. doi: 10.1111/vox.12526. [Epub ahead of print] PubMed PMID: 28516477.
21. Brenner AK, Tvedt TH, Nepstad I, Rye KP, Hagen KM, Reikvam H, Bruserud Ø. Patients with acute myeloid leukemia can be subclassified based on the constitutive cytokine release of the leukemic cells; the possible clinical relevance and the importance of cellular iron metabolism. *Expert Opin Ther Targets* 2017, 21, 357-369.
22. Brenner AK, Nepstad I, Bruserud Ø. Mesenchymal Stem Cells Support Survival and Proliferation of Primary Human Acute Myeloid Leukemia Cells through Heterogeneous Molecular Mechanisms. *Front Immunol.* 2017 Feb 9;8:106. doi: 10.3389/fimmu.2017.00106. eCollection 2017.
23. Omsland M, Bruserud Ø, Gjertsen BT, Andresen V. Tunneling nanotube (TNT) formation is downregulated by cytarabine and NF-κB inhibition in acute myeloid leukemia (AML). *Oncotarget.* 2017 Jan 31;8(5):7946-7963. doi: 10.18632/oncotarget.13853.
24. Brenner AK, Aasebø E, Hernandez-Valladares M, Selheim F, Berven F, Bruserud Ø. Rethinking the role of osteopontin in human acute myeloid leukemia. *Leuk Lymphoma* 2017, 58: 1494-1497.
25. Reikvam H, Hovland R, Forthun RB, Erdal S, Gjertsen BT, Fredly H, Bruserud Ø. Disease-stabilizing treatment based on all-trans retinoic acid and valproic acid in acute myeloid leukemia - identification of responders by gene expression profiling of pretreatment leukemic cells. *BMC Cancer* 2017;17(1):630. doi: 10.1186/s12885-017-3620-y.
26. Honnemyr M, Bruserud Ø, Brenner AK. The constitutive protease release by primary human acute myeloid leukemia cells. *J Cancer Res Clin Oncol* 2017, 143, 1985-1998.

2018

27. Mosevoll KA, Skrede S, Markussen DL, Fanebust HR, Flaatten HK, Aßmus J, Reikvam H, Bruserud Ø. Inflammatory Mediator Profiles Differ in Sepsis Patients With and Without Bacteremia. *Front Immunol* 2018, 9, 691. doi: 10.3389/fimmu.2018.00691.
28. Melve GK, Ersvaer E, Paulsen Rye K, Bushra Ahmed A, Kristoffersen EK, Hervig T, Reikvam H, Hatfield KJ, Bruserud Ø. The healthy donor profile of immunoregulatory soluble mediators is altered by stem cell mobilization and apheresis. *Cytotherapy* 2018, 20, 740-754.
29. Tvedt THA, Hovland R, Tsykunova G, Ahmed AB, Gedde-Dahl T, Bruserud Ø. A pilot study of single nucleotide polymorphisms in the interleukin-6 receptor and their effects on pre- and post-transplant serum

mediator level and outcome after allogeneic stem cell transplantation. *Clin Exp Immunol* 2018. doi: 10.1111/cei.13124. [Epub ahead of print] PubMed PMID: 29513361.

30. Reikvam H, Grønningsæter IS, Mosevoll KA, Lindås R, Hatfield K, Bruserud Ø. Patients with Treatment- Requiring Chronic Graft versus Host Disease after Allogeneic Stem Cell Transplantation Have Altered Metabolic Profiles due to the Disease and Immunosuppressive Therapy: Potential Implication for Biomarkers. *Front Immunol* 2018, 8, 1979. doi: 10.3389/fimmu.2017.01979.
31. Nepstad I, Reikvam H, Brenner AK, Bruserud Ø, Hatfield KJ. Resistance to the Antiproliferative In Vitro Effect of PI3K-Akt-mTOR Inhibition in Primary Human Acute Myeloid Leukemia Cells Is Associated with Altered Cell Metabolism. *Int J Mol Sci* 2018, 19(2). pii: E382. doi: 10.3390/ijms19020382.
32. Wangen R, Aasebø E, Trentani A, Døskeland SO, Bruserud Ø, Selheim F, Hernandez-Valladares M. Preservation Method and Phosphate Buffered Saline Washing Affect the Acute Myeloid Leukemia Proteome. *Int J Mol Sci* 2018, 19. pii: E296. doi: 10.3390/ijms19010296.
33. Forthun RB, Aasebø E, Rasinger JD, Bedringaas SL, Berven F, Selheim F, Bruserud Ø, Gjertsen BT. Phosphoprotein DIGE profiles reflect blast differentiation, cytogenetic risk stratification, FLT3/NPM1 mutations and therapy response in acute myeloid leukaemia. *J Proteomics* 2018; 173:32-41.10.1016/j.jprot.2017.11.014.
34. Nepstad I, Hatfield KJ, Aasebø E, Hernandez-Valladares M, Brenner AK, Bartaula-Brevik S, Berven F, Selheim F, Skavland J, Gjertsen BT, Reikvam H, Bruserud Ø. Two acute myeloid leukemia patient subsets are identified based on the constitutive PI3K-Akt-mTOR signaling of their leukemic cells; a functional, proteomic, and transcriptomic comparison. *Expert Opin Ther Targets* 2018; 22: 639-653.
35. Melve GK, Ersvaer E, Eide GE, Kristoffersen EK, Bruserud Ø. Peripheral Blood Stem Cell Mobilization in Healthy Donors by Granulocyte Colony-Stimulating Factor Causes Preferential Mobilization of Lymphocyte Subsets. *Front Immunol* 2018 2;9:845. doi: 10.3389/fimmu.2018.00845.

2019

36. Forthun RB, Hellesøy M, Sulen A, Kopperud RK, Sjøholt G, Bruserud Ø, McCormack E, Gjertsen BT. Modulation of phospho-proteins by interferon-alpha and valproic acid in acute myeloid leukemia. *J Cancer Res Clin Oncol* 2019 May 20.
37. Bjørnstad R, Aesoy R, Bruserud Ø, Brenner AK, Giraud F, Dowling TH, Gausdal G, Moreau P, Døskeland SO, Anizon F, Herfindal L. A Kinase Inhibitor with Anti-Pim Kinase Activity is a Potent and Selective Cytotoxic Agent Toward Acute Myeloid Leukemia. *Mol Cancer Ther* 2019; 18: 567-578.
38. Brenner AK, Aasebø E, Hernandez-Valladares M, Selheim F, Berven F, Grønningsæter IS, Bartaula-Brevik S, Bruserud Ø. The Capacity of Long-Term in Vitro Proliferation of Acute Myeloid Leukemia Cells Supported Only by Exogenous Cytokines Is Associated with a Patient Subset with Adverse Outcome. *Cancers (Basel)*. 2019 Jan 10;11(1). pii: E73.
39. Aasebø E, Hernandez-Valladares M, Selheim F, Berven FS, Brenner AK, Bruserud Ø. Proteomic Profiling of Primary Human Acute Myeloid Leukemia Cells Does Not Reflect Their Constitutive Release of Soluble Mediators. *Proteomes*. 2018 Dec 20;7(1). pii: E1.
40. Tvedt THA, Melve GK, Tsykunova G, Ahmed AB, Brenner AK, Bruserud Ø. Immunological Heterogeneity of Healthy Peripheral Blood Stem Cell Donors-Effects of Granulocyte Colony-Stimulating Factor on Inflammatory Responses. *Int J Mol Sci* 2018; 19(10). pii: E2886.
41. Nepstad I, Hatfield KJ, Tvedt THA, Reikvam H, Bruserud Ø. Clonal Heterogeneity Reflected by PI3K-AKT-mTOR Signaling in Human Acute Myeloid Leukemia Cells and Its Association with Adverse Prognosis. *Cancers (Basel)* 2018; 10(9). pii: E332.

42. Brenner AK, Bruserud Ø. Functional Toll-Like Receptors (TLRs) Are Expressed by a Majority of Primary Human Acute Myeloid Leukemia Cells and Inducibility of the TLR Signaling Pathway Is Associated with a More Favorable Phenotype. *Cancers (Basel)* 2019; 11(7). PMID: 31336716.
43. Reikvam H, Aasebø E, Brenner AK, Bartaula-Brevik S, Grønningsæter IS, Forthun RB, Hovland R, Bruserud Ø. High Constitutive Cytokine Release by Primary Human Acute Myeloid Leukemia Cells Is Associated with a Specific Intercellular Communication Phenotype. *J Clin Med* 2019; 8. PMID: 31277464.
44. Nepstad I, Hatfield KJ, Grønningsæter IS, Aasebø E, Hernandez-Valladares M, Hagen KM, Rye KP, Berven FS, Selheim F, Reikvam H, Bruserud Ø. Effects of insulin and pathway inhibitors on the PI3K-Akt-mTOR phosphorylation profile in acute myeloid leukemia cells. *Signal Transduct Target Ther* 2019; 4:20. PMID: 31240133.
45. Forthun RB, Hellesøy M, Sulen A, Kopperud RK, Sjøholt G, Bruserud Ø, McCormack E, Gjertsen BT. Modulation of phospho-proteins by interferon-alpha and valproic acid in acute myeloid leukemia. *J Cancer Res Clin Oncol* 2019; 145: 1729-1749.
46. Bjørnstad R, Aesoy R, Bruserud Ø, Brenner AK, Giraud F, Dowling TH, Gausdal G, Moreau P, Døskeland SO, Anizon F, Herfindal L. A Kinase Inhibitor with Anti-Pim Kinase Activity is a Potent and Selective Cytotoxic Agent Toward Acute Myeloid Leukemia. *Mol Cancer Ther* 2019; 18: 567-578.
47. Brenner AK, Aasebø E, Hernandez-Valladares M, Selheim F, Berven F, Grønningsæter IS, Bartaula-Brevik S, Bruserud Ø. The Capacity of Long-Term in Vitro Proliferation of Acute Myeloid Leukemia Cells Supported Only by Exogenous Cytokines Is Associated with a Patient Subset with Adverse Outcome. *Cancers (Basel)* 2019; 11(1).
48. Aasebø E, Hernandez-Valladares M, Selheim F, Berven FS, Brenner AK, Bruserud Ø. Proteomic Profiling of Primary Human Acute Myeloid Leukemia Cells Does Not Reflect Their Constitutive Release of Soluble Mediators. *Proteomes* 2018 20;7(1).
49. Grønningsæter IS, Fredly HK, Gjertsen BT, Hatfield KJ, Bruserud Ø. Systemic Metabolomic Profiling of Acute Myeloid Leukemia Patients before and During Disease-Stabilizing Treatment Based on All-Trans Retinoic Acid, Valproic Acid, and Low-Dose Chemotherapy. *Cells* 2019; 8. pii: E1229. doi: 10.3390/cells8101229.
50. Rundgren IM, Ersvær E, Ahmed AB, Rynningen A, Bruserud Ø. Circulating monocyte subsets in multiple myeloma patients receiving autologous stem cell transplantation - a study of the preconditioning status and the course until posttransplant reconstitution for a consecutive group of patients. *BMC Immunol* 2019 Nov 8;20(1):39. doi: 10.1186/s12865-019-0323-y.

2020

51. Aasebø E, Berven FS, Bartaula-Brevik S, Stokowy T, Hovland R, Vaudel M, Døskeland SO, McCormack E, Batth TS, Olsen JV, Bruserud Ø, Selheim F, Hernandez-Valladares M. Proteome and Phosphoproteome Changes Associated with Prognosis in Acute Myeloid Leukemia. *Cancers (Basel)* 2020; 12(3). pii: E709. doi: 10.3390/cancers12030709.
52. Rundgren IM, Ersvær E, Ahmed AB, Rynningen A, Bruserud Ø. A Pilot Study of Circulating Monocyte Subsets in Patients Treated with Stem Cell Transplantation for High-Risk Hematological Malignancies. *Medicina (Kaunas)* 2020; 56(1). pii: E36. doi: 10.3390/medicina56010036.
53. Rundgren IM, Rynningen A, Anderson Tvedt TH, Bruserud Ø, Ersvær E. Immunomodulatory Drugs Alter the Metabolism and the Extracellular Release of Soluble Mediators by Normal Monocytes. *Molecules* 2020; 25(2). pii: E367. doi: 10.3390/molecules25020367.
54. Tvedt THA, Skaarud KJ, Tjønnfjord GE, Gedde-Dahl T, Iversen PO, Bruserud Ø. The Systemic Metabolic Profile Early after Allogeneic Stem Cell Transplantation: Effects of Adequate Energy Support Administered through Enteral Feeding Tube. *Biol Blood Marrow Transplant* 2020; 26: 380-391.

55. Aasebø E, Berven FS, Bartaula-Brevik S, Stokowy T, Hovland R, Vaudel M, Døskeland SO, McCormack E, Batth TS, Olsen JV, Bruserud Ø, Selheim F, Hernandez-Valladares M. Proteome and Phosphoproteome Changes Associated with Prognosis in Acute Myeloid Leukemia. *Cancers (Basel)*. 2020 Mar 17;12(3). pii: E709. doi: 10.3390/cancers12030709.