Publications from the CoE in 2013:

CENTRE OF EXCELLENCE IN CELL-EXTRACELLULAR MATRIX RESEARCH

Peer-reviewed journals:

1. Pihlajaniemi

Aikio M, Hurskainen M, Brideau G, Hägg P, Sormunen R, Heljasvaara R, Gould DB, Pihlajaniemi T. Collagen XVIII Short Isoform Is Critical for Retinal Vascularization, and Overexpression of the Tsp-1 Domain Affects Eye Growth and Cataract Formation. *Invest Ophthalmol Vis Sci* 13; 54(12):7450-62, 2013. http://www.ncbi.nlm.nih.gov/pubmed/24135756

Field-Ridley A, Heljasvaara R, Pihlajaniemi T, Adatia I, Sun C, Keller RL, Gong WH, Datar S, Oishi P, Fineman JR. Endostatin, an Inhibitor of Angiogenesis, Decreases After Bidirectional Superior Cavopulmonary Anastamosis. *Pediatr Cardiol* 34(2):291-5, 2013. http://www.ncbi.nlm.nih.gov/pubmed/22961274

Haikarainen T, Koivunen J, Narwal M, Venkannagari H, Obaji E, Joensuu P, Pihlajaniemi T, Lehtiö L. para-Substituted 2-Phenyl-3,4-dihydroquinazolin-4-ones As Potent and Selective Tankyrase Inhibitors. *ChemMedChem* 8(12):1978-85, 2013. http://www.ncbi.nlm.nih.gov/pubmed/24130191

Izzi V, Chiurchiù V, Doldo E, Palumbo C, Tresoldi I, Bei R. Albonici L., Modesti A. Interleukin-17 produced by malignant mesothelioma-polarized immune cells promotes tumor growth and invasiveness. *Eur J Inflamm* 11(1): 203-14, 2013.

Narwal M, Koivunen J, Haikarainen T, Obaji E, Legala OE, Venkannagari H, Joensuu P, Pihlajaniemi T, Lehtiö L. Discovery of Tankyrase Inhibiting Flavones with Increased Potency and Isoenzyme Selectivity. *J Med Chem* 56:7880-89, 2013. http://www.ncbi.nlm.nih.gov/pubmed/24116873

Salokorpi N, Yrjänä S, Tuominen H, Karttunen A, Heljasvaara R, Pihlajaniemi T, Heikkinen E, Koivukangas J. Expression of VEGF and collagen XVIII in meningiomas: correlations with histopathological and MRI characteristics. *Acta Neurochir* (Wien) 155(6):989-96, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23605255

Zainul Z. Delete Genes to Repair Nerves; Knockouts and Axon Regeneration in Peripheral and Central Nervous System. *AJNN* 5: 1–7, 2013.

2. Myllyharju

Anantharajan J, Koski MK, Kursula P, Hieta R, Bergmann U, Myllyharju J, Wierenga RK. The structural motifs for substrate binding and dimerization of the α subunit of collagen prolyl 4-hydroxylase. *Structure* 21(12):2107-18, 2013. http://www.ncbi.nlm.nih.gov/pubmed/24207127

Kerkelä R, Karsikas S, Szabo Z, Serpi R, Magga J, Gao E, Alitalo K, Anisimov A, Sormunen R, Pietilä I, Vainio L, Koch WJ, Kivirikko KI, Myllyharju J, Koivunen P. Activation of hypoxia response in endothelial cells contributes to ischemic cardioprotection. *Mol Cell Biol* 33(16):3321-9, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23775121

Myllyharju J. Prolyl 4-hydroxylases, master regulators of the hypoxia response. *Acta Physiol* (Oxf) 208(2):148-65, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23489300

Myllyharju J, Koivunen P. Hypoxia-inducible factor prolyl 4-hydroxylases: common and specific roles. *Biol Chem* 394(4):435-48, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23324380

Tjäderhane L, Vered M, Pääkkönen V, Peteri A, Mäki JM, Myllyharju J, Dayan D, Salo T. The expression and role of Lysyl oxidase (LOX) in dentinogenesis. *Int Endod J* 46(6):581-9, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23190333

Winter AD, McCormack G, Myllyharju J, Page AP. Prolyl 4-hydroxlase activity is essential for development and cuticle formation in the human infective parasitic nematode Brugia malayi. *J Biol Chem* 288(3):1750-61, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23223450

3. Vainio

Andersson ER, Saltó C, Villaescusa JC, Cajanek L, Yang S, Bryjova L, Nagy II, Vainio SJ, Ramirez C, Bryja V, Arenas E. Wnt5a cooperates with canonical Wnts to generate midbrain dopaminergic neurons in vivo and in stem cells. *Proc Natl Acad Sci U S A* 110(7):E602-10, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23324743

Cheddad A, Nord C, Hörnblad A, Prunskaite-Hyyryläinen R, Eriksson M, Georgsson F, Vainio SJ, Ahlgren U. Improving signal detection in emission optical projection tomography via single source multi-exposure image fusion. *Opt Express* 21(14):16584-604, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23938510

Heliot C, Desgrange A, Buisson I, Prunskaite-Hyyryläinen R, Shan J, Vainio S, Umbhauer M, Cereghini S. HNF1B controls proximal-intermediate nephron segment identity in vertebrates by regulating Notch signalling components and Irx1/2. *Development* 140(4):873-85. 2013. http://www.ncbi.nlm.nih.gov/pubmed/23362348

Parviainen H, Schrade A, Kiiveri S, Prunskaite-Hyyryläinen R, Haglund C, Vainio S, Wilson DB, Arola J, Heikinheimo M. Expression of Wnt and TGF-β pathway components and key adrenal transcription factors in adrenocortical tumors: association to carcinoma aggressiveness. *Pathol Res Pract* 209(8):503-9, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23866946

4. Winqvist

Bojesen SE, Pooley KA, Johnatty SE *et al.* (incl. Winqvist R, Jukkola-Vuorinen A, Pylkäs K, Kauppila S). Multiple independent variants at the TERT locus are associated with telomere length and risks of breast and ovarian cancer. *Nat Genet* 45:371-384, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23535731

French JD, Ghoussaini M, Edwards SL *et al.* (incl. Winqvist R, Pylkäs K, Jukkola-Vuorinen A, Grip M). Functional variants at the 11q13 risk locus for breast cancer regulate cyclin D1 expression through long-range enhancers. *Am J Hum Genet* 92:489-503, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23540573

Garcia-Closas M, Couch FJ, Lindström S *et al.* (incl. Winqvist R, Pylkäs K, Jukkola-Vuorinen A, Kauppila S). Genome-wide association studies identify four ER negative-specific breast cancer risk loci. *Nat Genet* 45:392–398, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23535733

Gaudet MM, Kuchenbaecker KB, Vijai J *et al.* (incl. Winqvist R). Identification of a BRCA2-specific modifier locus at 6p24 related to breast cancer risk. *PLoS Genet* 9:e1003173, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23544012

Haanpää M, Pylkäs K, Moilanen JS, Winqvist R. Evaluation of the need for routine clinical testing of PALB2 c.1592delT mutation in BRCA negative Northern Finnish breast cancer families. *BMC Med Genet* 14:82, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23941127

Hein R, Maranian M, Hopper JL *et al.* (incl. Winqvist R, Pylkäs K, Jukkola-Vuorinen A, Grip M). Comparison of 6q25 breast cancer hits from Asian and European Genome Wide Association Studies in the Breast Cancer Association Consortium (BCAC). PLoS One 7:e42380, 2013. http://www.ncbi.nlm.nih.gov/pubmed/22879957

Justenhoven C, Obazee O, Winter S, Rabstein S, Lotz A, Harth V, Pesch B, Brüning T, Baisch C, Hartikainen JM, Mannermaa A, Kosma VM, Kataja V, Winqvist R, Pylkäs K, Jukkola-Vuorinen A, Grip M, Fasching PA, Beckmann M, Ekici AB, Hein A, Hall P, Li J, Chang-Claude J, Flesch-Janys D, Seibold P, Rudolph A, Hamann U, Ko YD, Brauch H. The UGT1A6_19_GG genotype is a breast cancer risk factor. *Front Genet* 4:104, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23781229

Meyer KB, O'Reilly M, Michailidou K *et al.* (incl. Winqvist R, Pylkäs K, Jukkola-Vuorinen A, Kauppila S). Fine-scale mapping of the FGFR2 breast cancer risk locus: putative functional variants differentially bind FOXA1 and E2F1. *Am J Hum Genet* 93:1046-1060, 2013.http://www.ncbi.nlm.nih.gov/pubmed/24290378

Michailidou K, Hall P, Gonzalez-Neira A *et al.* (incl. Winqvist R, Pylkäs K, Jukkola-Vuorinen A, Grip M). Large-scale genotyping identifies 41 new loci associated with breast cancer risk. *Nat Genet* 45:353-361, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23535729

Milne RL, Herranz J, Michailidou K *et al.* (incl. Winqvist R, Pylkäs K, Jukkola-Vuorinen A, Grip M). A large-scale assessment of two-way SNP interactions in breast cancer susceptibility using 46 450 cases and 42 461 controls from the breast cancer association consortium. *Hum Mol Genet*, 23(7):1934-46, 2014. Epub 2013 Nov 15.http://www.ncbi.nlm.nih.gov/pubmed/24242184

Nikkilä J, Parplys AC, Pylkäs K, Bose M, Huo Y, Borgmann K, Rapakko K, Nieminen P, Xia B, Pospiech H, Winqvist R. Heterozygous mutations in PALB2 cause DNA replication and damage response defects. *Nat Commun* 4:2578, 2013.http://www.ncbi.nlm.nih.gov/pubmed/24153426

5. Manninen

Teräväinen TP, Myllymäki SM, Friedrichs J, Strohmeyer N, Moyano JV, Wu C, Matlin KS, Muller DJ, Manninen A. αV-integrins are required for mechanotransduction in MDCK epithelial cells. *PLoS One* 8(8):e71485, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23977051

6. Eklund

Eklund L, Bry M, Alitalo K. Mouse models for studying angiogenesis and lymphangiogenesis in cancer. *Mol Oncol* 7(2):259-82, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23522958

Eklund L, Saharinen P. Angiopoietin signaling in the vasculature. *Exp Cell Res* 319(9):1271-80, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23500414

Uebelhoer M, Nätynki M, Kangas J, Mendola A, Nguyen HL, Soblet J, Godfraind C, Boon LM, Eklund L, Limaye N, Vikkula M. Venous malformation-causative TIE2 mutations mediate an AKT-dependent decrease in PDGFB. *Hum Mol Genet* 22(17):3438-48, 2013. http://www.ncbi.nlm.nih.gov/pubmed/23633549