

# A systems biology approach to study high-grade osteosarcoma Kuijjer, M.L.

#### Citation

Kuijjer, M. L. (2013, June 26). *A systems biology approach to study high-grade osteosarcoma*. Retrieved from https://hdl.handle.net/1887/21043

Version: Corrected Publisher's Version

License: License agreement concerning inclusion of doctoral thesis in the

Institutional Repository of the University of Leiden

Downloaded from: <a href="https://hdl.handle.net/1887/21043">https://hdl.handle.net/1887/21043</a>

**Note:** To cite this publication please use the final published version (if applicable).

#### Cover Page



## Universiteit Leiden



The handle <a href="http://hdl.handle.net/1887/21043">http://hdl.handle.net/1887/21043</a> holds various files of this Leiden University dissertation.

Author: Kuijjer, Marieke Lydia

Title: A systems biology approach to study high-grade osteosarcoma

**Issue Date:** 2013-06-26

#### Curriculum Vitae

Marieke Lydia Kuijjer was born on February 5, 1982, in Zaanstad, the Netherlands. She attended preuniversity school (gymnasium) at the Sint Adelbert College in Wassenaar. After graduating with honors in 2000, she enrolled in the Bachelor's programme Mathematics and Statistics at Leiden University. She switched to Biomedical Sciences in 2003, and received her Propaedeutics with distinction. During the Bachelor's phase of her studies, Marieke followed an Erasmus exchange program at Karolinska Institutet in Stockholm, Sweden. For her Bachelor's thesis, she studied protein dynamics using confocal microscopy under the supervision of C.R. Jost, PhD, at the department of Molecular Cell Biology, Leiden University Medical Center. During her Master's programme, she received two scholarships to follow Master's courses at Karolinska Institutet. As a trainee at the department of Human Genetics, Leiden University Medical Center, she integrated microarray data of a panel of cancer cell lines under the supervision of J.M. Boer, PhD. For her Master's thesis, she studied Wnt signaling in bone formation at the department of Molecular Cell Biology of the same institute, under the supervision of D.J. de Gorter, PhD, and P. ten Dijke, PhD. Marieke received her Master of Science degree in December 2008 and started her PhD education in the same month. The results obtained during her PhD education are described in this thesis. In May 2013, Marieke started as a postdoctoral fellow in the laboratory of J. Quackenbush, PhD, at the department of Biostatistics and Computational Biology of the Dana-Farber Cancer Institute, Boston (MA), USA.

### List of publications

- Pahl JHW, Santos SJ, <u>Kuijjer ML</u>, Boerman GH, Sand LGL, Szuhai K, Cleton-Jansen AM, Egeler RM, Bovée JVGM, Schilham MW, Lankester AC. Expression of the immune regulation antigen CD70 in osteosarcoma. *Submitted*
- Buddingh EP, Ruslan SEN, Reijnders CMA, <u>Kuijjer ML</u>, Roelofs H, Hogendoorn PCW, Egeler RM, Cleton-Jansen AM, Lankester AC. Mesenchymal stromal cells derived from healthy donors and osteosarcoma patients do not transform during long-term culture. *Submitted*
- Kansara E, Leong HS, Lin DM, Popkiss S, Pang P, Garsed DW, Walkley CR, Cullinane C, Ellul J, Haynes NM, Hicks R, Kuijjer ML, Cleton-Jansen AM, Hinds PW, Smyth MJ, Thomas DM. Senescence-related immunologic functions of the RB1 tumor suppressor in radiation-induced osteosarcoma. Submitted
- <u>Kuijjer ML</u>, van den Akker BEWM, Hilhorst R, Mommersteeg M, Buddingh EP, Serra M, Bürger H, Hogendoorn PCW, Cleton-Jansen AM. Kinome and mRNA expression profiling of high-grade osteosarcoma identifies genomic instability, and reveals Akt as potential target for treatment. *Submitted*
- de Vos van Steenwijk PJ, Ramwadhdoebe TH, Goedemans R, Doorduijn E, van den Ham JJ, Gorter A, van Hall T, <u>Kuijjer ML</u>, van Poelgeest MIE, van der Burg SH, Jordanova ES. Tumor infiltrating CD14 positive myeloid cells work side by side with T cells to prolong the survival in patients with cervical carcinoma. Accepted for publication in *International Journal of Cancer*
- Kuijjer ML, Peterse EFP, van den Akker BEWM, Briaire-de Bruijn IH, Serra M, Meza-Zepeda LA, Myklebost O, Hassan AB, Hogendoorn PCW, Cleton-Jansen AM. IR/IGF1R signaling as potential target for treatment of high-grade osteosarcoma. Accepted for publication in BMC Cancer
- <u>Kuijjer ML</u>, Cleton-Jansen AM, Hogendoorn PCW. Genome-wide analyses on high-grade osteosarcoma; making sense of a most genomically unstable tumor. *Review. International Journal of Cancer*. 2013 Feb 20;Epub

182 Chapter 10

• Namløs HM, Meza-Zepeda LA, Barøy T, Østensen IHG, Kresse SH, <u>Kuijjer ML</u>, Serra M, Bürger H, Cleton-Jansen AM, Myklebost O. Modulation of the Osteosarcoma Expression Phenotype by MicroRNAs. *PloS One.* 2012;7(10):e48086

- Mohseny AB, Cai Y, <u>Kuijjer ML</u>, Xiao W, van den Akker B, de Andrea CE, Jacobs R, ten Dijke P, Hogendoorn PCW, Cleton-Jansen AM. The activities of Smad and Gli mediated signalling pathways in high-grade conventional osteosarcoma. *European Journal of Cancer*. 2012 Dec;48(18):3429–3438
- Lenos K, Grawenda AM, Lodder K, <u>Kuijjer ML</u>, Teunisse AF, Repapi E, Grochola LF, Bartel F, Hogendoorn PCW, Wuerl P, Taubert H, Cleton-Jansen AM, Bond GL, Jochemsen AG. Alternate splicing of the p53 inhibitor HDMX offers a superior prognostic biomarker than p53 mutation in human cancer. *Cancer Research*. 2012 Aug 15;72(16):4074–84
- <u>Kuijjer ML</u>, Rydbeck H, Kresse SH, Buddingh EP, Lid AB, Roelofs H, Bürger H, Myklebost O, Hogendoorn PCW, Meza-Zepeda LA, Cleton-Jansen AM. Identification of osteosarcoma driver genes by integrative analysis of copy number and gene expression data. *Genes, Chromosomes and Cancer*. 2012 Jul;51(7):696-706
- Pansuriya TC, van Eijk R, d'Adamo P, van Ruler MA, <u>Kuijjer ML</u>, Oosting J, Cleton-Jansen AM, van Oosterwijk JG, Verbeke SL, Meijer D, van Wezel T, Nord KH, Sangiorgi L, Toker B, Liegl-Atzwanger B, San-Julian M, Sciot R, Limaye N, Kindblom LG, Daugaard S, Godfraind C, Boon LM, Vikkula M, Kurek KC, Szuhai K, French PJ, Bovée JVGM. Somatic mosaic IDH1 and IDH2 mutations are associated with enchondroma and spindle cell hemangioma in Ollier disease and Maffucci syndrome. *Nature Genetics*. 2011 Nov 6;43(12):1256–1261
- <u>Kuijjer ML</u>, Namløs HM, Hauben EI, Machado I, Kresse SH, Serra M, Llombart-Bosch A, Hogendoorn PCW, Meza-Zepeda LA, Myklebost O, Cleton-Jansen AM. mRNA expression profiles of primary high-grade central osteosarcoma are preserved in cell lines and xenografts. *BMC Medical Genomics*. 2011 Sep 20;4:66
- Buddingh EP†, <u>Kuijjer ML</u>†, Duim RA, Bürger H, Agelopoulos K, Myklebost O, Serra M, Mertens F, Hogendoorn PCW, Lankester AC, Cleton-Jansen AM. Tumor-infiltrating macrophages are associated with metastasis suppression in high-grade osteosarcoma: a rationale for treatment with macrophage activating agents. *Clinical Cancer Research*. 2011 Apr 15;17(8):2110–2119 †Shared first authorship

### Acknowledgments

It is a great pleasure to give respect to those who made this thesis possible. I owe sincere gratitude to my promotor, prof. dr. P.C.W. Hogendoorn, and to my copromotor, dr. A.M. Cleton-Jansen. Pancras, I enjoyed working in your group, which has been an excellent environment to start my scientific career. Anne-Marie, your enthusiasm and knowledge were always stimulating, and I thank you for giving me freedom to find my own research direction. All colleagues from the department of Pathology are acknowledged, in particular the technicians, who provided me with excellent technical support. I am indebted to my roommates for their patience and support and especially to Cathelijn, Jolieke, Sara, and Wei for their friendship. I dearly thank Lisanne Vijfhuizen, Frauke Liebelt, and Elleke Peterse; I enjoyed to work with you and wish you all the best with your careers. Special thanks to all EuroBoNeT partners and to PamGene for the good collaborations. An honorable mention goes to my family and friends for their understanding and support. Finally, I thank Alessandro Marin for supporting me in every possible way, and for believing in me. Ti amo.