

Osteoprotegerin: a double-edged sword in osteoarthritis development

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Citation

Rodriguez Ruiz, A. (2022, October 19). Osteoprotegerin: a double-edged sword in osteoarthritis development. Retrieved from https://hdl.handle.net/1887/3484338

Version:	Publisher's Version
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List of publications

Mutation in the CCAL1 locus accounts for bidirectional process of human subchondral bone turnover and cartilage mineralization.

Alejandro Rodríguez Ruiz^s, Marcella van Hoolwerff^s, Sara Sprangers, Eka Suchiman, Ton Schoenmaker, Petra Dibbets-Schneider, Johan L. Bloem, Rob GHH Nelissen, Christian Freund, Christine Mummery, Vincent Everts, Teun J. de Vries, Yolande F. M. Ramos[#], and Ingrid Meulenbelt[#] Rheumatology (Oxford). 2022;00:1-13.

The role of TNFRSF11B in development of osteoarthritic cartilage.

Alejandro Rodríguez Ruiz, Margo Tuerlings, Ankita Das, Rodrigo Coutinho de Almeida, Eka Suchiman, Rob G. H. H. Nelissen, Yolande F. M. Ramos, Ingrid Meulenbelt.

Rheumatology (Oxford). 2022;61(2):856-864.

High-impact *FN1* mutation decreases chondrogenic potential and affects cartilage deposition via decreased binding to collagen type II.

Marcella van Hoolwerff[§], **Alejandro Rodríguez Ruiz**[§], Marga Bouma, Eka Suchiman, Roman I. Koning, Carolina R. Jost, Aat A. Mulder, Christian Freund, Farshid Guilak, Yolande F. M. Ramos, and Ingrid Meulenbelt.

Sci Adv. 2021 Nov 5;7(45):eabg8583. Shared first coauthors.

Cartilage from humaninduced pluripotent stem cells: comparison with neocartilage from chondrocytes and bone marrow mesenchymal stromal cells.

Alejandro Rodríguez Ruiz, Amanda Dicks, Margo Tuerlings, Koen Schepers, Melissa van Pel, Rob G. H. H. Nelissen, Christian Freund, Christine L. Mummery, Valeria Orlova, Farshid Guilak, Ingrid Meulenbelt & Yolande F. M. Ramos. Cell Tissue Res. 2021;386(2):309-20.

RNA sequencing data integration reveals an miRNA interactome of osteoarthritis cartilage.

Rodrigo Coutinho de Almeida, Yolande F. M. Ramos, Ahmed Mahfouz, Wouter den Hollander, Nico Lakenberg, Evelyn Houtman, Marcella van Hoolwerff, Eka Suchiman, **Alejandro Rodríguez Ruiz**, P. Eline Slagboom, Hailiang Mei, Szymon M Kiełbasa, Rob G. H. H. Nelissen, Marcel Reinders, Ingrid Meulenbelt. Ann Rheum Dis 2019;78:270–277.

WWP2 osteoarthritis risk allele rs1052429-A confers risk by affecting cartilage matrix deposition via hypoxia associated genes

Margo Tuerlings, G.M.C. Janssen, Ilja Boone, Marcella van Hoolwerff, **Alejandro Rodríguez Ruiz**, Evelyn Houtman, Eka Suchiman, Robert J. P. van der Wal, Rob G.H.H. Nelissen, Rodrigo Coutinho de Almeida, Peter A. van Veelen, Yolande F. M. Ramos, and Ingrid Meulenbelt.

In revision in Osteoarthritis and cartilage.

The role of epigenetics as a stable marker to monitor cartilage quality in hiPSC chondrogenesis

Ghazaleh Hajmousa, Rodrigo Coutinho de Almeida, **Alejandro Rodríguez Ruiz**, Marga Bouma, Roderick Sliecker, Hailing Mei, Rob G.H.H. Nelissen, Christian Freund, Judith Bovee, Keito Ito, Yolande F M Ramos, Ingrid Meulenbelt In preparation for submission.

Curriculum vitae

Alejandro Rodríguez Ruiz was born on the 19th of November of 1992 in Valencia, Spain. He attended high school education in San Pedro Pascual. In 2010, he started his bachelor in Biotechnology at the Polytechnic University of Valencia (UPV), where he specialized in biotechnology applied to biomedical research.

For his bachelor thesis, he worked at the Centre of Biomaterials and Tissue Engineering (CBIT), where he generated three different biomaterials to achieve a controlled release system of growth factors upon brain injury. In 2014, he started a two years masters in Biomedical Sciences at the KU Leuven in Belgium, which he finished *cum laude*. During his masters, he performed two minor internships at the Genetics Laboratory and the Stem Cell institute in Leuven. For his final internship he moved to London to investigate osteosarcoma disease in a 3D *in vitro* biomaterial system and enter into the fascinating skeletal system field at the University College London (UCL).

In 2017, he started his PhD in the Biomedical Data Sciences group at Leiden University Medical Centre (LUMC) under the guidance of Prof. Dr. Ingrid Meulenbelt and Dr. Yolande Ramos. During his PhD he established and worked with an induced pluripotent stem cell (hiPSC) model of cartilage and bone to unravel the role of osteoprotegerin in osteoarthritis (OA). In August 2021, he became a postdoctoral researcher at the department of Pulmonology at the LUMC in the group of Prof. Dr. Pieter Hiemstra and Dr. Anne van der Does to generate hiPSC-derived alveolar models for lung repair.

Acknowledgments

After five years of doctoral research, I can say that this exciting journey has come to an end. A rollercoaster full of ups and downs, unexpected turns, short and long cuts and some detours that finally conclude with a title: Doctor. This journey would not have been possible without the help of many people to whom I would like to dedicate some words.

Dear Prof. Ingrid Meulenbelt. Thank you for offering me the opportunity to form part of your team. Your guidance and mentorship taught me valuable lessons for the rest of my professional career.

Dear Dr. Yolande Ramos. Thank you for your supervision and guidance both in the laboratory and while writing our manuscripts. Your mentorship and kindness strongly supported me throughout these years.

Dear members of my doctorate committee: Prof. Mummery, Prof. van Osch, Dr. Geurts. Thank you for reading this manuscript and for your suggestions to improve this thesis. Dear Dr. de Vries, thank you for your valuable input and fruitful discussions about the OPG-XL mutation paper.

I would also like to thank my colleagues in the osteoarthritis (OA) group. First of all, I would like to thank my paranymphs Eka and Evelyn. Dear Eka, thank you for asking for help whenever I was doing RT-qPCRs, Fluidigms, or any particularly difficult experiment, which you seemed to smell from your office. Also, your ccultural and culinary curiosity introduced me to discover many new places to visit in the Netherlands. Dear Evelyn, Evelyne or Evelin, thank you for teaching me all your vast SPSS knowledge and showing me the ABC of the lab. I will always remember how you used to hit your samples with that hammer to isolate RNA. You also kindly introduced me to the Dutch culture (and their directness) which really helped me during my first years here. Dear Marcella, thank you for your constant supply of sweets and for eating all the cakes (and fries) I couldn't finish during birthdays and other celebrations. Together we were able to defeat the CRISPR and the hiSPC differentiation projects and successfully finish our PhDs. I would also like to thank the rest of my awesome colleagues including Margo, Ritchie, Rodrigo, Ghazaleh, Ilja, Matthew, Niek, Nico and Nicoline. Also, the excellent students who came to work under my supervision Luuk and Ankita. I would like to thank the rest of the MolEpi group, and especially Eline, who always gave an incredible positive energy to the team. Thank you Inge for your kind help regarding the logistics during my PhD.

Moreover, I would like to thank all our collaborators Prof. Guilak, Prof. Nelissen, Prof. Bloem, Prof. Everts, Christian, Sara, Koen, Melissa, Petra and Ton. I would

also like to thank the OA patients and especially the OPG-XL family members for their enthusiastic cooperation in this study.

Finally, I would like to thank my new lab, friends and family for their constant support. Thank you PulmoScience lab for your great atmosphere. Thank you Pieter and Anne for welcoming me to your team. Thank you Sijia, Ying, Abilash, Doris and Shewanti for all the fun activities, food, laughs, advice and also for your support during the final steps for writing this thesis.

Next, I would like to thank the Biotechs, and especially Alejandra, Miriam and Evy, for always being a family where the laws of time and space don't seem to change anything. Thank you for being there. I would also like thank Ari, Schef, and Katja for our lovely meetings, dinners and little trips. Por supuesto, no me puedo olvidar de mis amigas del colegio María y Julia. Valencia no sería lo mismo sin vosotras.

Likewise, I would like to thank the Gang of Leiden, with Jacopo and Francesca for showing us Imperia, and Akane for introducing us to Osaka and Tokyo. I would also like to thank Nerea, Laura, Ruplu and Joseph for the time spent together. For our laughs, movie nights, museum days, warm lunches, adventures (and misadventures) and exhausting but marvelous trips.

Por último quisiera dar las gracias a mi familia. Gracias Mamá, Papá, Guillermo, Ita, Lucky y Merlín. Gracias por ofrecerme vuestro constante apoyo, consejo, alegrías, paseos y viajes de vuelta a casa donde podía recargarme de energía para seguir afrontando este periplo. Gracias por ser mis duendes, ayudándome en todo lo posible a pesar de la distancia. Este doctorado está dedicado a vosotros.

Addendum

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