



Universiteit
Leiden
The Netherlands

Vascular tumors of bone and related lesions: from gene fusions to tumor models

Ong, S.L.M.

Citation

Ong, S. L. M. (2024, November 26). *Vascular tumors of bone and related lesions: from gene fusions to tumor models*. Retrieved from <https://hdl.handle.net/1887/4168760>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/4168760>

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

Curriculum Vitae

Sheena Ong Li Ming was born on November 4, 1990, in Singapore. She pursued her education in Biomedical Sciences at Republic Polytechnic, Singapore, graduating with a diploma in 2009. She then pursued her Bachelor's degree in Biological Sciences and graduated with honors in cell biology from the University of Edinburgh in 2013. After completing her undergraduate studies, Sheena took time to explore her interests and strengths while working as a research assistant at the Agency for Science, Technology and Research (A*STAR), Institute of Medical Biology. Over the course of five years under the supervision of Dr. Norris Ray Dunn, she developed a strong interest in disease modeling and gene editing. This passion led her to further pursue her studies and she joined the group of Prof. Dr. Judith Bovée at the department of Pathology, Leiden University Medical Center, for a PhD focused on gene fusions and modelling vascular tumors. Sheena is currently working as a Scientist at Biosynth, the Netherlands, where she is establishing a cell culture laboratory and developing a pipeline to discover novel therapeutic peptide binders using cell models.

List of publications

- Paul Bigliardi, Seetanshu Junnarkar, Chinmay Markale, Sydney Lo, Elena Bigliardi, Alex Kalyuzhny, **Sheena L. M. Ong**, Ray Dunn, Walter Wahli, Mei Bigliardi-Qi. The Opioid Receptor Influences Circadian Rhythms in Human Keratinocytes through the β -Arrestin Pathway. *Cells* 2024. doi: 10.3390/cells13030232
- Sheena L. M. Ong**, Isadora P. Gomes, Hans J. Baelde, Fabricio Passador-Santos, Bruno A. B. de Andrade, Inge H. Briaire-de Bruijn, Israel L. Cavalcante, Willem H. Schreuder, Anne-Marie Cleton-Jansen, Arjen H. G. Cleven, Karoly Szuhai, Carolina C. Gomes, Judith V. M. G. Bovée. No NFATC2 fusion in simple bone cyst of the jaw. *Histopathology* 2023. doi: 10.1111/his.14905
- Lucian B. Tomaz, Bernard A. Liu, Meroshini M., **Sheena L. M. Ong**, Ee Kim Tan, Nicholas S. Tolwinski, Christopher S. William, Anne-Claude Gingras, Marc Leushacke, N. Ray Dunn. MCC is a centrosomal protein that relocates to non-centrosomal apical sites during intestinal cell differentiation. *J Cell Sci* 2022. doi: 10.1242/jcs.259272
- Sheena L. M. Ong**, Hans J. Baelde, David G. P. van IJzendoorn, Judith V. M. G. Bovée, Karoly Szuhai. Identification of stable housekeeping genes for induced pluripotent stem cells and -derived endothelial cells for drug testing. *Sci Rep* 2022. doi: 10.1038/s41598-022-20435-w
- Sheena L. M. Ong**, Karoly Szuhai, Judith V. M. G. Bovée. Gene fusions in vascular tumors and their underlying molecular mechanisms. *Expert Rev Mol Diagn* 2021. doi: 10.1080/14737159.2021.1950533
- Sheena L. M. Ong**, Suk Wai Lam, Brendy E. W. M. van den Akker, Herman M. Kroon, Inge H. Briaire-de Bruijn, Arjen H. G. Cleven, Dilara C. Savci-Heijink, Anne-Marie Cleton-Jansen, Daniel Baumhoer, Karoly Szuhai, Judith V. M. G. Bovée. Expanding the Spectrum of EWSR1-NFATC2-rearranged Benign Tumors: A Common Genomic Abnormality in Vascular Malformation/Hemangioma and Simple Bone Cyst. *Am J Surg Pathol* 2021. doi: 10.1097/PAS.0000000000001748
- Ivo J. H. M. de Vos, Arnette Shi Wei Wong, Jason Taslim, **Sheena L. M. Ong**, Nicole C. Syder, Julian L. Goggi, Thomas J. Carney, Maurice A. M. van Steensel. The novel zebrafish model pretzel demonstrates a central role for SH3PXD2B in defective collagen remodelling and fibrosis in Frank-Ter Haar syndrome. *Biol Open* 2020. doi: 10.1242/bio.054270

Sheena L. M. Ong, Ivo J. H. M. de Vos, M. Meroshini, Yogavalli Poobalan, N. Ray Dunn. Microfibril-associated glycoprotein 4 (Mfap4) regulates haematopoiesis in zebrafish. *Sci Rep* 2020. doi: 10.1038/s41598-020-68792-8.

Slim Mzoughi, Federico Di Tullio, Diana H. P. Low, Corina-Mihaela Motofeanu, **Sheena L. M. Ong**, Heike Wollmann, Cheng Mun Wun, Paul Kruszka, Maximilian Muenke, Friedhelm Hildebrandt, N. Ray Dunn, Daniel M. Messerschmidt, Ernesto Guccione. PRDM15 loss of function links NOTCH and WNT/PCP signaling to patterning defects in holoprosencephaly. *Sci Adv* 2020. doi: 10.1126/sciadv.aax9852

Ivo J. H. M. de Vos, Evelyn Yaqiong Tao, **Sheena L. M. Ong**, Julian L. Goggi, Thomas Scerri, Gabrielle R. Wilson, Chernis Guai Mun Low, Arnette Shi Wei Wong, Dominic Grussu, Alexander P. A. Stegmann, Michel van Geel, Renske Janssen, David J. Amor, Melanie Bahlo, Norris R. Dunn, Thomas J. Carne, Paul J. Lockhart, Barry J. Coull, Maurice A. M. van Steensel. Functional analysis of a hypomorphic allele shows that MMP14 catalytic activity is the prime determinant of the Winchester syndrome phenotype. *Hum Mol Genet* 2018. doi: 10.1093/hmg/ddy168

Christina James, Tian Yun Zhao, Anisa Rahim, Parul Saxena, Nazreen Abdul Muthalif, Takeshi Uemura, Norihiro Tsuneyoshi, **Sheena L. M. Ong**, Kazuei Igarashi, Chin Yan Lim, Norris Ray Dunn, Leah A. Vardy. MINDY1 Is a Downstream Target of the Polyamines and Promotes Embryonic Stem Cell Self-Renewal. *Stem Cells* 2018. doi: 10.1002/stem.2830

Slim Mzoughi, Jingxian Zhang, Delphine Hequet, Shun Xie Teo, Haitong Fang, Qiao Rui Xing, Marco Bezzi, Michelle Kay Yi Seah, **Sheena L. M. Ong**, Eun Myoung Shin, Heike Wollmann, Esther S. M. Wong, Muthafar Al-Haddawi, Colin L. Stewart, Vinay Tergaonkar, Yui-Han Loh, N. Ray Dunn, Daniel M. Messerschmidt, Ernesto Guccione. PRDM15 safeguards naive pluripotency by transcriptionally regulating WNT and MAPK-ERK signaling. *Nat Genet* 2017. doi: 10.1038/ng.3922

Lena Ho, Marie van Dijk, Sam Tan Jian Chye, Daniel M. Messerschmidt, Serene C. Chng, **Sheena L. M. Ong**, Ling Ka Yi, Souad Boussata, Grace Hui-Yi Goh, Gijs B. Afink, Chin Yan Lim, N. Ray Dunn, Davor Solter, Barbara B. Knowles, Bruno Reversade. ELABELA deficiency promotes preeclampsia and cardiovascular malformations in mice. *Science* 2017. doi: 10.1126/science.aam6607

Jamie Trott, Ee Kim Tan, **Sheena L. M. Ong**, Drew M. Titmarsh, Simon L. I. J. Denil, Maybelline Giam, Cheng Kit Wong, Jiaxu Wang, Mohammad Shboul, Michelle Eio, Justin Cooper-White, Simon M. Cool, Giulia Rancati, Lawrence W. Stanton, Bruno Reversade, N. Ray Dunn. Long-Term Culture of Self-renewing Pancreatic Progenitors Derived from Human Pluripotent Stem Cells. *Stem Cell Reports* 2017. doi: 10.1016/j.stemcr.2017.05.019

Teddy Young, Yogavalli Poobalan, Ee Kim Tan, Shijie Tao, **Sheena L. M. Ong**, Peter Wehner, Janina Schwenty-Lara, Chin Yan Lim, Akila Sadasivam, Matthew Lovatt, Siew Tein Wang, Yusuf Ali, Annette Borchers, Karuna Sampath, N. Ray Dunn. The PDZ domain protein Mcc is a novel effector of non-canonical Wnt signaling during convergence and extension in zebrafish. *Development* 2014. doi: 10.1242/dev.114033

Acknowledgements

I want to thank everyone who contributed to the realization of this thesis.

First and foremost, I am deeply grateful to my promoter, Prof. Dr. Judith Bovée and co-promoter Dr. Karoly Szuhai. Despite the challenges we faced, your constant support and mentorship have been invaluable. I am thankful for the opportunities you both have provided me. I would like to thank the guidance committee and promotion committee members for their time. I want to extend my gratitude to all my colleagues at the Department of Pathology, including Inge, Brendy, Hans, Pauline, and Alwine, for the hard work you have contributed throughout my PhD. To all PhD students and postdocs, especially Sanne Martens, Debora, Ieva, and Suk Wai, thank you for your encouragement and guidance. To my Master student, Carolina, you have outdone yourself, thank you for all the hard work.

To my paranympths, Natasja and Tessa, who have been with me from the beginning, thank you for patiently answering all my questions, taking my calls, and always being there to help. Natasja, your support until the end of my PhD means a lot to me.

To my ex-boss, Ray, I want to express my endless gratitude. Your inspiration and encouragement to further my studies, and your support and faith in me, were instrumental in my decision to pursue this PhD.

To my friends in Singapore, Jessie and Jereon, thank you for cheering me and all the thoughtful gifts from home. To brotherhood friends, Hongwei, Andrew, Kai Jun, Clement, and Darrel, thank you all for your warm welcome whenever I return home. To my friends in the Netherlands, Van, Cordelia, Victoria, Bingen and Tom, thank you for listening and unwind with me when I needed it. To Miriam, who is watching and cheering for me from above. Thank you to everyone who's ever rooted for me.

To my god sister, Shermaine, you always stay in regular touch with me despite the physical distance between us. Your consistent communication and support mean the world to me. Thank you for always being there.

To my beloved boyfriend, Camiel, and family, thank you for your unwavering support during the final stages of my PhD journey. I am grateful for your sacrifices, including giving up your office room for me.

Lastly, to my family and relatives, I am deeply grateful for your endless support and love that have brought me to this day. To all my sisters, Queena, Tenna, Vanna, and Zeena, thank you for loving me despite my flaws.

*Dearest Mom and stepdad, thank you for encouraging me to pursue my dreams.
This achievement is dedicated to you.*