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Academic Degrees:

1983 B.Sc. (Hons) - Biochemistry; University of Hong Kong
 1986 M.Phil. - Biochemistry; University of Hong Kong
 1990 D.Sc. - Biology; Nagoya University, Nagoya, Japan

Details of Employment:

7/2013 - present	Associate Chair, International Partnerships Department of Molecular Genetics, University of Toronto, Canada
11/2010 - present	Director of International Partnership Research Institute The Hospital for Sick Children, Canada
9/2006 - present	Head Program in Developmental & Stem Cell Biology The Hospital for Sick Children, Canada
5/2005 - 9/2006	Head Program in Developmental Biology The Hospital for Sick Children, Canada
7/2004 - present	Professor Department of Molecular Genetics (formerly Department of Molecular and Medical Genetics), University of Toronto, Canada
1/2003 - 7/2003	Acting Head Program in Developmental Biology The Hospital for Sick Children, Canada
7/2000 - present	Senior Scientist The Hospital for Sick Children, Canada
7/1999 - 06/2004	Associate Professor Department of Molecular and Medical Genetics University of Toronto, Canada
9/1995 - 6/1999	Assistant Professor Department of Molecular and Medical Genetics University of Toronto, Canada
7/1994 - 6/2000	Scientist Program in Developmental Biology The Hospital for Sick Children, Toronto, Canada

5/1991 - 6/1994

Post-doctoral Fellow (with Dr. Alexandra L. Joyner)
Samuel Lunenfeld Research Institute, Toronto, Canada

4/1990 - 4/1991

Post-doctoral Fellow (with Dr. Yoshiaki Suzuki)
National Institute for Basic Biology, Okazaki, JapanList of Publications (last 5 years):**Original research articles**

1. Ward RJ, Lee L, Graham K, Satkunendran T, Yoshikawa K, Ling E, Harper L, Austin R, Nieuwenhuis E, Clarke ID, Hui C-c, Dirks PB. Multipotent CD15+ cancer stem cells in patched1-deficient mouse medulloblastoma. **Cancer Res** 69, 4682-4690, 2009. *Funded by CCSRI*
2. Cheung HO, Zhang X, Ribeiro A, Mo R, Makino S, Puviindran V, Law KK, Briscoe J, Hui C-c. The kinesin protein Kif7 is a critical regulator of Gli transcription factors in mammalian hedgehog signaling. **Sci Signal** 2 ra29, 2009. *Funded by CCSRI*
3. Chen MH, Wilson CW, Li YJ, Law KKL, Lu CS, Gacayan R, Zhang X, Hui C-c, Chuang PT. Cilium-independent regulation of Gli proteins by Sufu in Hedgehog signaling is evolutionarily conserved. **Genes & Development** 23, 1910-1928, 2009. *Funded by CCSRI*
4. Cain JE, Islam E, Haxho F, Chen L, Bridgewater D, Nieuwenhuis E, Hui C-c, Rosenblum ND. GLI3 repressor controls nephron number via regulation of Wnt11 and Ret in ureteric tip cells. **PLoS ONE** 4, e7313, 2009. *Funded by CCSRI*
5. Xu K, Nieuwenhuis E, Cohen B, Wang W, Canty A, Danska J, Coultas L, Rossant J, Wu M, Piscione T, Gossler A, Hicks G, Hui C-c, Henkelman M, Yu L, Sled J, Gridley T, Egan S. Lunatic Fringe-mediated Notch signaling is required for lung alveogenesis. **American J of Physiology** 298, L45-56, 2010.
6. Pospisilik JA, Schramek D, Schnidar H, Cronin SJF, Nehme NT, Zhang X, Puviindran V, Knauf C, Cani PD, Aumayr K, Todoric J, Bayer M, Tar K, Haschemi A, Puviindran V, Orthofer M, Neely GG, Dietzl G, Manoukian A, Funovics M, Prager G, Wagner O, Ferrandon D, Aberger F, Hui C-c, Esterbauer H, Penninger J. Drosophila whole genome screen reveals Hedgehog-signaling as a key regulator of brown/white adipose cell fate. **Cell** 140, 148-160, 2010. *Funded by CCSRI*
7. Coultas L, Nieuwenhuis E, Anderson GA, Cabezas J, Nagy A, Henkelman RM, Hui C-c, Rossant J. Hedgehog regulates distinct vascular patterning events through VEGF dependent and independent mechanisms. **Blood** 116, 653-660, 2010. *Funded by CCSRI*
8. Noor A, Whibley A, Marshall CR, Gianakopoulos PJ, Piton A, Carson AR, Orlic-Milacic M, Lionel A, Sato D, Pinto D, Drmic I, Noakes C, Senman, L, Zhang X, Mo R, Gauthier J, Crosbie, Pagnamenta AT, Munson J, Estes AM, Fiebig A, Franke A, Schreiber S, Stewart AFR, Roberts R, McPherson R, Guter SJ, Cook EH, Dawson G, Schellenberg GD, Battaglia A, Maestrini E, Austim Genome Project Consortium, Fernandez B, Zwaigenbaum L, Bryson SE, Roberts W, Szatmari P, Gallagher L, Stratton MR, Gecz J, Brady AF, Schwartz CE, Schachar RJ, Monaco AP, Rouleau GA, Hui C-c, Raymond FL, Scherer SW, Vincent JB. Disruption at the PTCHD1 locus on Xp22.11 in autism spectrum disorder and intellectual disability. **Sci Transl Med** 2, 49ra68, 2010.
9. Choy SW, Cheng CW, Lee ST, Li VWT, Hui C-c, Liu D, Cheng SH. A cascade of irx1a and irx2a controls shh expression during retinogenesis. **Dev Dyn** 239, 3204-3214, 2010.
10. Kim B, Kim Y, Sakuma R, Hui C-c, Ruther U, Jorgensen JS. Primordial germ cell proliferation is impaired in Fused Toes mutant embryos. **Dev Biol** 349, 417-426, 2010. *Funded by CIHR*

11. Kim JJ-E, Gill P, Rotin L, van Eede M, Henkelman R, Hui C-c, Rosenblum ND. Suppressor of fused controls mid-hindbrain patterning and cerebellar morphogenesis via GLI3 repressor. **J Neurosci** 31, 1825-1836, 2011. *Funded by CCSRI*
12. Cwinn MA, Mazerolle C, McNeill B, Ringuette R, Thurig S, Hui C-c, Wallace VA. Suppressor of fused is required to maintain the multipotency of neural progenitor cells in the retina. **J Neurosci** 31, 5169-5180, 2011. *Funded by CCSRI*
13. Miyagawa S, Matsumaru D, Murashima A, Omori A, Satoh Y, Haraguchi R, Motoyama J, Iguchi T, Nakagata N, Hui C-c, Yamada G. The role of Sonic Hedgehog-Gli2 pathway in the masculinization of external genitalia. **Endocrinology** 152, 2894-2903, 2011.
14. Zhang S-S, Kim K-H, Rosen A, Smyth JW, Sakuma R, Delgado-Olguin P, Davis M, Chi NC, Puvindran V, Gaborit N, Sukonnik T, Wylie JN, Brand-Arzamendi K, Farman G, Kim J, Rose RA, Marsden PA, Zhu Y, Zhou Y-Q, Miquerol L, Henkelman RM, Stainier DYR, Shaw RM, Hui C-c*, Bruneau BG*, Backx PH. Iroquois homeobox gene 3 establishes fast conduction in the cardiac His-Purkinje network. **Proc Natl Acad Sci USA** 108, 13576-13581, 2011. *co-corresponding authors *Funded by CIHR*
15. Hsu S-HC, Zhang X, Yu C, Li ZS, Wunder JS, Hui C-c, Alman BA. Kif7 promotes Hedgehog signaling in growth plate chondrocytes by restricting the inhibitory function of Sufu. **Development** 138, 3791-3801, 2011. *Funded by CCSRI*
16. Ngan ES-W, Garcia-Barcelo M-M, Yip BH-K, Poon H-C, Lau S-T, Kwok CK-M, Sat E, Sham M-H, Wong KK-Y, Wainwright B, Cherny SS, Hui C-c, Sham PC, Lui VC-H, Tam PK-H. Hedgehog-Notch induced premature gliogenesis represents a new disease mechanism for Hirschsprung's disease. **J Clin Invest** 121, 3467-3478, 2011. *Funded by CCSRI*
17. Maezawa Y, Binnie M, Li C, Thorner P, Hui C-c, Alman B, Taketo MM, Quaggin SE. A new cre driver mouse line, tcf21/pod1-cre, targets metanephric mesenchyme. **PLoS One** 7, e40547, 2012.
18. Gaborit N, Sakuma R, Wylie JN, Kim KH, Zhang SS, Hui C-c, Bruneau BG. Cooperative and antagonistic roles for Irx3 and Irx5 in cardiac morphogenesis and postnatal physiology. **Development** 139, 4007-4019, 2012. *Funded by CIHR*
19. Li ZJ, Nieuwenhuis E, Nien W, Zhang X, Zhang J, Puvindran V, Wainwright BJ, Kim PC, Hui C-c. Kif7 regulates Gli2 through Sufu-dependent and -independent functions during skin development and tumorigenesis. **Development** 139, 4152-4161, 2012. *Funded by CCSRI*
20. Hsu SHC, Zhang X, Cheng S, Wunder JS, Hui C-c, Alman BA. Sufu mediates the effect of Parathyroid hormone-like hormone Pthlh on chondrocyte differentiation in the growth plate. **J Biol Chem** 287, 36222-36228, 2012. *Funded by CCSRI*
21. Law KK, Makino S, Mo R, Zhang X, Puvindran V, Hui C-c. Antagonistic and cooperative actions of Kif7 and Sufu define graded intracellular Gli activities in Hedgehog signaling. **PLoS One** 7, e50193, 2012. *Funded by CCSRI*
22. Zhang Z, Lv X, Yin W, Zhang X, Feng J, Wu W, Hui C-c, Zhang L, Zhao Y. Partial degradation of Ci by proteasomes involves Ter94 ATPase and K11-linked ubiquitination. **Dev Cell** 25, 636-644, 2013. *Funded by CCSRI*
23. Chi L, Galtseva A, Chen L, Mo R, Hui C-c, Rosenblum N. Kif3a regulates nephron formation in a lineage-specific manner via GLI3 repressor and FGF8. **PLoS ONE** 8, e265448, 2013. *Funded by CCSRI*
24. Ohno K, Sawada JI, Takiya S, Kimoto M, Matsumoto A, Tsubota T, Uchino K, Hui C-c, Sezutsu H, Handa H, Suzuki Y (2013). Silk Gland Factor-2 (GSF-2) involved in fibroin gene

transcription consists of LIM-homeodomain, LIM-interacting, and single-stranded DNA-binding proteins. **J Biol Chem** 288, 31581-31591, 2013.

25. Li ZJ, Mark SC, Mak T, Angers S, Taylor MD, Hui C-c (2013). Evasion of p53 and G2/M checkpoints are characteristics of Hh-driven basal cell carcinoma. **Oncogene** (In press; doi: 10.1038/onc.2013.212). *Funded by CCSRI*
26. Adolphe C, Nieuwenhuis E, Villani R, Li ZJ, Kaur P, Hui C-c*, Wainwright B* (2014). Patched 1 and Patched 2 Redundancy Plays a Key Role in Regulating Epidermal Differentiation. **J Invest Dermatol** (In press; doi: 10.1038/jid.2014.63) *corresponding authors *Funded by CCSRI*
27. Smemo S, Tena JJ, Kim K-H, Gamazon ER, Sakabe NJ, Gómez-Marín C, Aneas I, Credidio FL, Sobreira DR, Wasserman NF, Lee JH, Puvindran V, Tam D, Shen M, Son JE, Alizadeh-Vakili N, Sung H-K, Naranjo S, Acemel RD, Manzanares M, Nagy A, Cox NJ, Hui C-c*, Gomez-Skarmeta JL*, and Nóbrega MA* (2014). Obesity-associated variants within *FTO* form long-range functional connections with *IRX3*. **Nature** 507: 371-375, 2014. *corresponding authors *Funded by CIHR*
28. Zhulyn O, Li D, Deimling S, Alizadeh-Vakili N, Mo R, Puvindran V, Chen M-H, Chuang P-T, Hopyan S, Hui C-c (2014). A switch from low to high Shh activity regulates establishment of limb progenitors and signaling centers. **Dev Cell** 29: 241-249, 2014. *Funded by CIHR*
29. Li D, Sakuma R, Alizadeh-Vakili N, Mo R, Puvindran V, Deimling S, Zhang X, Hopyan S*, Hui C-c* (2014). Formation of proximal and anterior limb skeleton requires early function of *Irx3* and *Irx5* and is negatively regulated by Shh signaling. **Dev Cell** 29: 233-240, 2014. *corresponding authors *Funded by CIHR*

Invited reviews and chapters

1. Hui C-c, Jiang J (2011). Overview of hedgehog signaling pathway. In: “**Hedgehog signaling activation in human cancer and its clinical implications**” (Ed. Xie J), pp 1-15, Springer Press. *Funded by CCSRI*
2. Hui C-c, Angers S. Gli proteins in development and disease. **Annu Rev Cell Dev Biol** 27, 513-537, 2011. *Funded by CCSRI*
3. Li ZJ, Hui C-c (2012). Patching the gap between Hh signaling and BCC: Insights from transgenic mouse models. In “**Basal Cell Carcinoma**” (ISBN 978-953-307-608-9), pp. 55-70, InTech - Open Access Publisher. *Funded by CCSRI*
4. Kim K-H, Rosen A, Bruneau BG, Hui C-c*, Backx PH*. Iroquois homeodomain transcription factors in heart development and function. **Circ Res** 110, 1513-1524, 2012. *co-corresponding authors *Funded by CIHR*
5. Zhulyn O, Hui C-c (December 2012) GLI Proteins in Human Genetic Disease. In: **eLS**, John Wiley & Sons, Ltd: Chichester. (DOI: 10.1002/9780470015902.a0024402) *Funded by CCSRI*
6. Ngan ESW, Kim K-H, Hui C-c. SONIC HEDGEHOG signaling and VACTERL association. **Molecular Syndromology** 4, 32-45, 2013. *Funded by CCSRI*

Grant support (last 5 years):

Current

1. “Hedgehog signaling in skin development and tumorigenesis”, *Canadian Cancer Society Research Institute*, 07/2011-06/2014, \$427,500 (total).
2. “Iroquois transcription factors in heart development and function”, *Canadian Institutes of Health Research*, co-applicant (Peter Backx), 04/2014-03/2019, \$724,330 (total).

Expired

1. “*Iroquois* transcription factors in cardiac development and function”, *Canadian Institutes of Health Research*, 04/2009-03/2014, \$716,470 (total).
2. “Role of Kif7 and Sufu in hedgehog signaling and medulloblastoma formation”, *Canadian Cancer Society Research Institute*, 07/2010-06/2013, \$427,500 (total).
3. “Control of hindlimb development and patterning by the *Iroquois* homeobox genes”, *Canadian Institutes of Health Research*, 04/2008-03/2012, \$579,448 (total).
4. “Hedgehog signaling in proliferative control and tumorigenesis: Gli target genes and Patched receptors”, *National Cancer Institute of Canada*, 07/2006-06/2011, \$705,000 (total).
5. “Role of *Iroquois* transcription factor in cardiac development and function”, *Canadian Institutes of Health Research*, 09/2006-03/2009, \$446,200 (total).
6. “Kinesin motor proteins Kif7 and Kif27 in Hedgehog signal transduction and tumorigenesis”, *National Cancer Institute of Canada*, 07/2007-06/2010, \$414,597 (total).