

Heng Boon Chin, Alexis

Position: Scientist
University: The University of Hong Kong
E-Mail: alexish@hku.hk



Education:

Ph.D in Biochemistry, University of Manchester, United Kingdom

Master in Clinical Embryology, National University of Singapore, Singapore

BSc. Hons in Biotechnology, Imperial College, University of London, United Kingdom

Research Interests:

- i) Adult, Embryonic & Induced Pluripotent Stem Cells
- ii) Transplantation, Tissue engineering & Therapy
- iii) Immunology
- iv) Biomaterials
- v) Cryobiology and Cell Cryopreservation
- vi) Toxicology
- vii) Mammalian Embryology, Reproductive Biology & Cloning
- viii) Protein and Carbohydrate Biochemistry

Selected Publications:

1. Saxena P, **Heng BC**, Bai P, Folcher M, Zulewski H, Fussenegger M. A programmable synthetic lineage-control network that differentiates human iPSCs into glucose-sensitive insulin-secreting beta-like cells. *Nat Commun.* 2016 Apr 11;7:11247. doi: 10.1038/ncomms11247.
2. Yuan C, Wang P, Zhu S, Zou T, Wang S, Xu J, **Heng BC**, Diogenes A, Zhang C. EphrinB2 Stabilizes Vascularlike Structures Generated by Endothelial Cells and Stem Cells from Apical Papilla. *J Endod.* 2016 Sep;42(9):1362-70. doi: 10.1016/j.joen.2016.05.012.
3. Zhu SY, Wang PL, Liao CS, Yang YQ, Yuan CY, Wang S, Dissanayaka WL, **Heng BC**, Zhang CF. Transgenic expression of ephrinB2 in periodontal ligament stem cells (PDLSCs) modulates

osteogenic differentiation via signaling crosstalk between ephrinB2 and EphB4 in PDLSCs and between PDLSCs and pre-osteoblasts within co-culture. *J Periodontal Res.* 2016 Oct 20. doi: 10.1111/jre.12424. [Epub ahead of print]

4. **Heng BC**, Ye X, Liu Y, Dissanayaka WL, Cheung GS, Zhang C. Effects of Recombinant Overexpression of Bcl2 on the Proliferation, Apoptosis, and Osteogenic/Odontogenic Differentiation Potential of Dental Pulp Stem Cells. *J Endod.* 2016 Apr;42(4):575-83.
5. **Heng BC**, Lim LW, Wu W, Zhang C. An overview of protocols for the neural induction of dental and oral stem cells in vitro. *Tissue Eng Part B Rev.* 2016 Jun;22(3):220-50.
6. **Heng BC**, Zhu S, Xu J, Yuan C, Gong T, Zhang C. Effects of decellularized matrices derived from periodontal ligament stem cells and SHED on the adhesion, proliferation and osteogenic differentiation of human dental pulp stem cells in vitro. *Tissue Cell.* 2016 Apr;48(2):133-43.
7. **Heng BC**, Heinimann K, Miny P, Iezzi G, Glatz K, Scherberich A, Zulewski H, Fussenegger M. mRNA Transfection-Based, Feeder-Free, Induced Pluripotent Stem Cells From Adipose Tissue of a 50 Year-Old Patient. *Metab Eng.* 2013 Jul;18:9-24.
8. Yap MS, Tang YQ, Yeo Y, Lim WL, Lim LW, Tan KO, Richards M, Othman I, Poh CL, **Heng BC**. Pluripotent Human embryonic stem cell derived neural lineages for in vitro modelling of enterovirus 71 infection and therapy. *Virol J.* 2016 Jan 6;13(1):5.
9. Yap MS, Nathan KR, Yeo Y, Lim LW, Poh CL, Richards M, Lim WL, Othman I, **Heng BC**. Neural Differentiation of Human Pluripotent Stem Cells for Nontherapeutic Applications: Toxicology, Pharmacology, and In Vitro Disease Modeling. *Stem Cells Int.* 2015;2015:105172.
10. Hu JJ, Yin Z, Shen WL, Xie YB, Zhu T, Lu P, Cai YZ, Kong MJ, **Heng BC**, Zhou YT, Chen WS, Chen X, Ouyang HW. Manipulating Stem Cells to Treat Calcification Pharmacological Regulation of in-situ Tissue Stem Cells Differentiation for Soft Tissue Calcification Treatment. *Stem Cells.* 2016 Feb 6. doi: 10.1002/stem.2306. [Epub ahead of print]
11. Liu H, Zhang C, Zhu S, Lu P, Zhu T, Gong X, Zhang Z, Hu J, Yin Z, **Heng BC**, Chen X, Ouyang HW. Mohawk Promotes the Tenogenesis of Mesenchymal Stem Cells through Activation of the TGF β Signaling Pathway. *Stem Cells.* 2015 Feb;33(2):443-55.
12. Li M, Zou Y, Lu Q, Tang N, **Heng A**, Islam I, Tong HJ, Dawe GS, Cao T. Efficient derivation of dopaminergic neurons from SOX1(-) floor plate cells under defined culture conditions. *J Biomed Sci.* 2016 Mar 8;23(1):34.
13. Chen JL, Zhang W, Liu ZY, **Heng BC**, Ouyang HW, Dai XS. Physical regulation of stem cells differentiation into teno-lineage: current strategies and future direction. *Cell Tissue Res.* 2015 May;360(2):195-207.
14. Shen W, Chen J, Zhu T, Chen L, Zhang W, Fang Z, **Heng BC**, Yin Z, Chen X, Ji J, Chen W, Ouyang HW. Intra-articular injection of human meniscus stem/progenitor cells promotes meniscus regeneration and ameliorates osteoarthritis through stromal cell-derived factor-1/CXCR4-mediated homing. *Stem Cells Transl Med.* 2014 Mar;3(3):387-94.

15. **Heng BC**, Fussenegger M. Integration-Free Reprogramming of Human Somatic Cells to Induced Pluripotent Stem Cells (iPSCs) Without Viral Vectors, Recombinant DNA, and Genetic Modification. *Methods Mol Biol.* 2014;1151:75-94.
16. **Heng BC**, Saxena P, Fussenegger M. Heterogeneity of baseline neural marker expression by undifferentiated mesenchymal stem cells may be correlated to donor age. *J Biotechnol. J Biotechnol.* 2014 Mar 20;174:29-33.
17. J, Lu P, Ren H, Zheng Z, Ji J, Liu H, Jiang F, Ling S, **Heng BC**, Hu X, Ouyang H. 17 β -Estradiol Protects Human Eyelid-Derived Adipose Stem Cells against Cytotoxicity and Increases Transplanted Cell Survival in Spinal Cord injury. *J Cell Mol Med.* 2014 Feb;18(2):326-43.
18. Han Q, Fan L, **Heng BC**, Ge Z. Apoptosis and Metabolism of Mesenchymal Stem Cells during Chondrogenic Differentiation In Vitro. *International Journal of Tissue Regeneration*, Vol. 4, No. 3, pp 61-64 (2013)
19. **Heng BC**, Li J, Chen AK, Reuveny S, Cool SM, Birch WR, OH SK. Translating human embryonic stem cells from 2D to 3D cultures in a defined medium on laminin and vitronectin coated surfaces. *Stem Cells Dev.* 2012 Jul 1;21(10):1701-15.
20. Shen W, Chen J, Yina Z, Chen X, Liua H, **Heng BC**, Chen W, Ouyang HW. Allogeneous tendon stem/progenitor cells in silk scaffold for functional shoulder repair. *Cell Transplant.* 2012;21(5):943-58.
21. Rufaihah AJ, Haider HK, **Heng BC**, Ye L, Tan RS, Toh WS, Tian XF, Sim EK, Cao T. Therapeutic angiogenesis by transplantation of human embryonic stem cell-derived CD133+ endothelial progenitor cells for cardiac repair. *Regenerative Medicine. Regen Med.* 2010 Mar;5(2):231-44.
22. Tay CY, Gu H, Leong WS, Yu H, Li HQ, **Heng BC**, Tintang H, Loo SC, Li LJ, Tan LP. Cellular behavior of human mesenchymal stem cells cultured on single-walled carbon nanotube film. *Carbon.* 2010; 48: 1095-1104.
23. **Heng BC**, Richards M, Ge Z, Shu Y. Induced adult stem (iAS) cells and induced transit amplifying progenitor (iTAP) cells-a possible alternative to induced pluripotent stem (iPS) cells? *J Tissue Eng Regen Med.* 2010 Feb;4(2):159-62.
24. **Heng BC**, Hsu SH, Cowan CM, Liu A, Tai J, Chan Y, Sherman W, Basu S. Trans-Catheter Injection Induced Changes in Human Bone Marrow-Derived Mesenchymal Stem Cells. *Cell Transplant.* 2009 Dec; 18: 1111–1121.
25. **Heng BC**, Cowan CM, Basu S. Comparison of Enzymatic and Non-Enzymatic Means of Dissociating Adherent Monolayers of Mesenchymal Stem Cells. *Biol Proced Online.* 2009 Dec; 11: 161-169.
26. **Heng BC**, Cowan CM, Davalian D, Stankus J, Duong-Hong D, Ehrenreich K, Basu S. Electrostatic binding of nanoparticles to mesenchymal stem cells via high molecular weight polyelectrolyte chains. *J Tissue Eng Regen Med.* 2009 Jun;3(4):243-54.

27. **Heng BC**, Cowan CM, Basu S. Temperature and calcium ions affect aggregation of mesenchymal stem cells in phosphate buffered saline. *Cytotechnology*. 2008 Oct;58(2):69-75.
28. **Heng BC**, Vinoth KJ, Liu H, Hande MP, Cao T. Low temperature tolerance of human embryonic stem cells. *Int J Med Sci*. 2006 Jul 25;3(4):124-9.
29. **Heng BC**, Toh WS, Pereira BP, Tan BL, Fu X, Liu H, Lu K, Yeo JF, Cao T. An autologous cell lysate extract from human embryonic stem cell (hESC) derived osteoblasts can enhance osteogenesis of hESC. *Tissue Cell*. 2008 Jun;40(3):219-28.
30. **Heng BC**, Vinoth KJ, Lu K, Deng X, Ge Z, Bay BH, Cao T. Prolonged exposure of human embryonic stem cells to heat shock induces necrotic cell death. *Biocell (Mendoza)*, Sept./Dec. 2007, vol.31, no.3, p.405-410.
31. Toh WS, Yang Z, Liu H, **Heng BC**, Lee EH, Cao T. Effects of culture conditions and bone morphogenetic protein 2 on extent of chondrogenesis from human embryonic stem cells. *Stem Cells*. 2007 Apr;25(4):950-60.
32. Rufaihah AJ, Haider HK, **Heng BC**, Ye L, Toh WS, Tian XF, Lu K, Sim EK, Cao T. Directing endothelial differentiation of human embryonic stem cells via transduction with an adenoviral vector expressing the VEGF(165) gene. *J Gene Med*. 2007 Jun;9(6):452-61.
33. **Heng BC**, Liu H, Rufaihah AJ, Cao T. Human embryonic stem cell (HESC) colonies display a higher degree of spontaneous differentiation when passaged at lower densities. *In Vitro Cell Dev Biol Anim*. 2006 Mar-Apr;42(3-4):54-7.
34. Toh WS, Yang Z, **Heng BC**, Cao T. New perspectives in chondrogenic differentiation of stem cells for cartilage repair. *ScientificWorldJournal*. 2006 Mar 20;6:361-4.
35. Toh WS, Liu H, **Heng BC**, Rufaihah AJ, Ye CP, Cao T. Combined effects of TGFbeta1 and BMP2 in serum-free chondrogenic differentiation of mesenchymal stem cells induced hyaline-like cartilage formation. *Growth Factors*. 2005 Dec;23(4):313-21.
36. Cao T, Liu H, **Heng BC**. Combining RNA interference with PTD-fusion transcription factors: a novel integrated strategy for achieving trans-differentiation of adult stem cells? *Med Hypotheses*. 2005;65(5):992-3.
37. **Heng BC**, Cao T. Immunoliposome-mediated delivery of neomycin phosphotransferase for the lineage-specific selection of differentiated/committed stem cell progenies: potential advantages over transfection with marker genes, fluorescence-activated and magnetic affinity cell-sorting. *Med Hypotheses*. 2005;65(2):334-6.
38. **Heng BC**, Liu H, Cao T. Late-adhering human embryonic stem cell clumps during serial passage can yield morphologically 'normal-looking' colonies. *Ann Clin Lab Sci*. 2005 Autumn;35(4):459-62.
39. Cao T, **Heng BC**, Ye CP, Liu H, Toh WS, Robson P, Li P, Hong YH, Stanton LW. Osteogenic differentiation within intact human embryoid bodies result in a marked increase in osteocalcin

secretion after 12 days of in vitro culture, and formation of morphologically distinct nodule-like structures. *Tissue Cell*. 2005 Aug;37(4):325-34.

40. **Heng BC**, Hong YH, Cao T. Modulating gene expression in stem cells without recombinant DNA and permanent genetic modification. *Cell Tissue Res*. 2005 Aug;321(2):147-50.
41. **Heng BC**, Yu H, Yin Y, Lim SG, Cao T. Factors influencing stem cell differentiation into the hepatic lineage in vitro. *J Gastroenterol Hepatol*. 2005 Jul;20(7):975-87.
42. **Heng BC**, Liu H, Cao T. Can the high nuclear to cytoplasmic ratio of human embryonic stem cells make them more vulnerable to physical stress encountered with bulk-passage protocols? *Med Hypotheses*. 2005;64(6):1242-3.
43. **Heng BC**, Cao T. Incorporating protein transduction domains (PTD) within intracellular proteins associated with the 'stemness' phenotype. Novel use of such recombinant 'fusion' proteins to overcome current limitations of applying autologous adult stem cells in regenerative medicine? *Med Hypotheses*. 2005;64(5):992-6.
44. **Heng BC**, Haider HK, Sim EK, Cao T, Tong GQ, Ng SC. Reprogramming autologous skeletal myoblasts to express cardiomyogenic function. Challenges and possible approaches. *Int J Cardiol*. 2005 Apr 28;100(3):355-62.
45. **Heng BC**, Cao T, Liu H, Rufaihah AJ. Reduced mitotic activity at the periphery of human embryonic stem cell colonies cultured in vitro with mitotically-inactivated murine embryonic fibroblast feeder cells. *Cell Biochem Funct*. 2005 Mar-Apr;23(2):141-6.
46. **Heng BC**, Cao T, Bested SM, Tong GQ, Ng SC. "Waste" follicular aspirate from fertility treatment--a potential source of human germline stem cells? *Stem Cells Dev*. 2005 Feb;14(1):11-4.
47. **Heng BC**, Haider HK, Sim EK, Cao T, Tong GQ, Ng SC. Comments about possible use of human embryonic stem cell-derived cardiomyocytes to direct autologous adult stem cells into the cardiomyogenic lineage. *Acta Cardiol*. 2005 Feb;60(1):7-12.
48. **Heng BC**, Kemeny DM, Liu H, Cao T. Potential applications of intracellular antibodies (intrabodies) in stem cell therapeutics. *J Cell Mol Med*. 2005 Jan-Mar;9(1):191-5.
49. **Heng BC**, Cao T, Liu H, Phan TT. Directing stem cells into the keratinocyte lineage in vitro. *Exp Dermatol*. 2005 Jan;14(1):1-16.
50. **Heng BC**, Cao T, Lee EH. Directing stem cell differentiation into the chondrogenic lineage in vitro. *Stem Cells*. 2004; 22(7):1152-67.
51. **Heng BC**, Cao T. Can RNA interference be used to expand the plasticity of autologous adult stem cells? *J Mol Med*. 2004 Dec;82(12):784-6.

52. **Heng BC**, Cao T, Tong GQ, Ng SC. Potential utility of cell-permeable transcription factors to direct stem cell differentiation. *Stem Cells Dev.* 2004 Oct;13(5):460-2.
53. **Heng BC**, Liu H, Cao T. Feeder cell density--a key parameter in human embryonic stem cell culture. *In Vitro Cell Dev Biol Anim.* 2004 Sep-Oct;40(8-9):255-7.
54. **Heng BC**, Cao T, Stanton LW, Robson P, Olsen B. Strategies for directing the differentiation of stem cells into the osteogenic lineage in vitro. *J Bone Miner Res.* 2004 Sep;19(9):1379-94.
55. **Heng BC**, Tong GQ, Ng SC. Human embryonic stem cell-derived fibroblastic and epitheloid lineages as xeno-free support? *In Vitro Cell Dev Biol Anim.* 2004 May-Jun;40(5-6):129-30.
56. **Heng BC**, Haider HKh, Sim EK, Cao T, Ng SC. Strategies for directing the differentiation of stem cells into the cardiomyogenic lineage in vitro. *Cardiovasc Res.* 2004 Apr 1;62(1):34-42.
57. **Heng BC**, Cao T, Haider HK, Wang DZ, Sim EK, Ng SC. An overview and synopsis of techniques for directing stem cell differentiation in vitro. *Cell Tissue Res.* 2004 Mar;315(3):291-303.
58. **Heng BC**, Phan TT, Liu H, Ouyang HW, Cao T. Can the therapeutic advantages of allogenic umbilical cord blood-derived stem cells and autologous bone marrow-derived mesenchymal stem cells be combined and synergized? *ASAIO J.* 2006 November/December;52(6):611-613.
59. Ye CP, **Heng BC**, Liu H, Toh WS, Cao T. Culture media conditioned by heat-shocked osteoblasts enhances the osteogenesis of bone marrow-derived mesenchymal stromal cells. *Cell Biochem Funct.* 2007 May-Jun;25(3):267-76.
60. **Heng BC**, Liu H, Ge Z, Cao T. Mechanical dissociation of human embryonic stem cell colonies by manual scraping after collagenase treatment is much more detrimental to cellular viability compared to trypsinization with gentle pipetting. *Biotechnol Appl Biochem.* 2007 May;47(Pt 1):33-7.
61. Toh WS, Yang Z, **Heng BC**, Cao T. Differentiation of human embryonic stem cells toward the chondrogenic lineage. *Methods Mol Biol.* 2007;407:333-49.
62. **Heng BC**, Richards M. Induced Pluripotent Stem Cells (iPSC) – can direct delivery of transcription factors into the cytosol overcome the perils of permanent genetic modification? *Minim Invasive Ther Allied Technol.* 2008;17(5):326-7.
63. Deng Z, Wang S, **Heng BC**, Yuan C, Zhang C. Enterococcus faecalis promotes osteoclast differentiation within an osteoblast/osteoclast co-culture system. *Biotechnol Lett.* 2016 Sep;38(9):1443-8
64. Zhu S, Dai J, Liu H, Cong X, Chen Y, Wu Y, Hu H, **Heng BC**, Ouyang HW, Zhou Y. Down-Regulation of Rac GTPase-Activating Protein OCRL1 Causes Aberrant Activation of Rac1 in Osteoarthritis Development. *Arthritis Rheumatol.* 2015 May;67(8):2154-63.

65. Gong T, **Heng BC**, Lo EC, Zhang C. Current Advance and Future Prospects of Tissue Engineering Approach to Dentin/Pulp Regenerative Therapy. *Stem Cells International* 2016; 2016:1-13.
66. Xu W, Jiang S, Chen Q, Ye Y, Chen J, **Heng BC**, Jiang Q, Wu B, Ding Z, Zhang C. Systemically Transplanted Bone Marrow-derived Cells Contribute to Dental Pulp Regeneration in a Chimeric Mouse Model. *J Endod.* 2015 Dec 10. pii: S0099-2399(15)00929-2.
67. Xia Q, Zhu S, Wu Y, Wang J, Cai Y, Chen P, Li J, **Heng BC**, Ouyang HW, Lu P. Intra-Articular Transplantation of Atsttrin-Transduced Mesenchymal Stem Cells Ameliorate Osteoarthritis Development. *Stem Cells Transl Med.* 2015 May;4(5):523-31
68. **Heng BC**, Aubel D, Fussenegger M. Prosthetic gene networks as an alternative to standard pharmacotherapies for metabolic disorders. *Curr Opin Biotechnol.* 2015 Feb 10;35C:37-45.
69. Tang QM, Chen JL, Shen WL, Yin Z, Liu HH, Fang Z, **Heng BC**, Ouyang HW, Chen X. Fetal and adult fibroblasts display intrinsic differences in tendon tissue engineering and regeneration. *Sci Rep.* 2014 Jul 3;4:5515.
70. Zhang W, **Heng BC**, Jiang YZ, Ouyang HW. Clinical translation of autologous cell-based tissue engineering techniques as Class III therapeutics in China: Taking cartilage tissue engineering as an example. *Journal of Orthopaedic Translation.* Volume 2, Issue 2, April 2014, Pages 56–65
71. Lu P, Zhang GR, Cai YZ, **Heng BC**, Ren H, Wang LL, Ji J, Zou XH, Ouyang HW. Lentiviral encoded shRNA silencing of proteoglycan decorin enhances tendon repair and regeneration within a rat model. *Cell Transplant.* 2013;22(9):1507-17.
72. Fang Z, Zhu T, Shen W, Tang Q, Chen J, Zi Y, Ji JF, **Heng BC**, Ouyang H, Chen X. Transplantation of Fetal Instead Of Adult Fibroblasts Reduces the Probability of Ectopic Ossification during Tendon Repair. *Tissue Eng Part A.* 2014 Jul;20(13-14):1815-26.
73. Han Q, Li C, Liu H, **Heng BC**, Wu G, Ge Z. Dynamic Distribution of Cells in Porous Scaffolds During Cell Loading. *Journal of Medical & Biological Engineering.* 2014; 34(2): 130-136.
74. Zhu S, Liu H, Wu Y, **Heng BC**, Chen P, Liu H, Ouyang HW. Wnt and Rho GTPase signaling in osteoarthritis development and intervention: implications for diagnosis and therapy. *Arthritis Res Ther.* 2013 Jul 11;15(4):217.
75. **Heng BC**, Aubel D, Fussenegger M. G Protein-Coupled Receptors Revisited: Therapeutic Applications Inspired by Synthetic Biology. *Annu Rev Pharmacol Toxicol.* 2014;54:227-49.
76. **Heng BC**, Aubel D, Fussenegger M. An overview of the diverse roles of G-protein coupled receptors (GPCRs) in the pathophysiology of various human diseases. *Biotechnol Adv.* 2013 Dec;31(8):1676-94.
77. Zhang K, Wang L, Han Q, **Heng BC**, Yang Z, Ge Z. Relationship between cell function and initial cell seeding density of primary porcine chondrocytes in vitro. *Biomedical Engineering: Applications, Basis and Communications, Vol. 25, No. 5 (2013) 1340001.*

78. Wen D, Wang H, **Heng BC**, Liu H. Increased expression of nestin in human pterygial epithelium. *Int J Ophthalmol*. 2013 Jun 18;6(3):259-63.
79. **Heng BC**, Bezerra PP, Preiser PR, Law SK, Xia Y, Boey F, Venkatraman SS. Effect of cell-seeding density on the proliferation and gene expression profile of human umbilical vein endothelial cells within ex vivo culture. *Cytotherapy*. 2011 May;13(5):606-17.
80. Zhou SY, Xie ZL, Xiao O, Yang XR, **Heng BC**, Sato Y. Inhibition of mouse alkali burn induced-corneal neovascularization by recombinant adenovirus encoding human vasohibin-1. *Mol Vis*. 2010 Jul 26;16:1389-98.
81. Ouyang HW, Cao T, Zou X, **Heng BC**, Wang LL, Song XH, Huang HF. Mesenchymal stem cell sheets revitalize dense tissue grafts: implications for repair of large musculoskeletal defects. *Transplantation*. 2006 Jul 27;82(2):170-4.
82. Ge Z, Hu Y, **Heng BC**, Yang Z, Lee EH, Cao T. Osteoarthritis and Therapy. *Arthritis Rheum*. 2006 Jun 15;55(3):493-500.
83. **Heng BC**, Cao T. Milieu-based versus gene-modulatory strategies for directing stem cell differentiation - a major issue of contention in transplantation medicine. *In Vitro Cell Dev Biol Anim*. 2006 Mar-Apr;42(3-4):51-3.
84. **Heng BC**, McNiece I, Haider HK, Calne RY, Cao T. Possible advantages of stem cell transfusion into the peripheral circulation, as opposed to localized transplantation in situ. *Stem Cells Dev*. 2005 Aug;14(4):351-3.
85. **Heng BC**, Cao T, Haider HK, Rufaihah AJ, Sim EK. Utilizing stem cells for myocardial repair--to differentiate or not to differentiate prior to transplantation? *Scand Cardiovasc J*. 2005 Jul;39(3):131-4.
86. Cao T, **Heng BC**. Intracellular antibodies (intrabodies) versus RNA interference for therapeutic applications. *Ann Clin Lab Sci*. 2005 Summer;35(3):227-9.
87. **Heng BC**, Cao T. Co-transplantation of autologous adult stem cells together with differentiated derivatives of human embryonic stem cells. A novel strategy to enhance the efficacy of autologous cell-transplantation therapy? *Wound Repair Regen*. 2005 May-Jun;13(3):353-6.
88. **Heng BC**, Liu H, Cao T. Utilising human embryonic stem cells as "catalysts" for biological repair and regeneration. Challenges and some possible strategies. *Clin Exp Med*. 2005 May;5(1):37-9.
89. Cao T, **Heng BC**. Differentiation therapy of cancer. Potential advantages over conventional therapeutic approaches targeting death of cancer/tumor cells. *Med Hypotheses*. 2005;65(6):1202-3.
90. **Heng BC**, Liu H, Cao T. Scaffold implants for the controlled release of heparan sulfate (HS) and other glycosaminoglycan (GAG) species: this could facilitate the homing of adult stem cells for tissue/organ regeneration. *Med Hypotheses*. 2005;65(2):414-5.

91. **Heng BC**, Cao T. Could the transit-amplifying stage of stem cell differentiation be the most suited for transplantation purposes? *Med Hypotheses*. 2005;65(2):412-3.
92. **Heng BC**, Cao T. Making cell-permeable recombinant telomerase (trans-telomerase) through fusion of its catalytic subunit (hTERT) with protein transduction domains (PTD): a possible strategy to overcome replicative senescence during ex vivo culture of primary explanted cells. *Med Hypotheses*. 2005;65(1):199-200.
93. **Heng BC**, Cao T. Making cell-permeable antibodies (Transbody) through fusion of protein transduction domains (PTD) with single chain variable fragment (scFv) antibodies: potential advantages over antibodies expressed within the intracellular environment (Intrabody). *Med Hypotheses*. 2005;64(6):1105-8.
94. **Heng BC**, Cao T. The differentiation status of stem cells and their derivatives: a key consideration in transplantation medicine. *ASAIO J*. 2004 Nov-Dec;50(6):626-8.
95. Liu H, Kemeny DM, **Heng BC**, Ouyang HW, Melendez AJ, Cao T. The Immunogenicity and Immunomodulatory Function of Osteogenic Cells Differentiated from Mesenchymal Stem Cells. *J Immunol*. 2006 Mar 1;176(5):2864-71.
96. Liu H, Lu K, MacAry PA, Wong KL, **Heng A**, Cao T, Kemeny DM. Soluble molecules are key in maintaining the immunomodulatory activity of murine mesenchymal stromal cells. *J Cell Sci*. 2012 Jan 1;125(Pt 1):200-8.
97. Zhang X, Wu Y, Pan Z, Sun H, Wang J, Yu D, Zhu S, Dai J, Chen Y, Tian N, **Heng BC**, Coen ND, Xu H, Ouyang H. The effects of lactate and acid on articular chondrocytes function: Implications for polymeric cartilage scaffold design. *Acta Biomater*. 2016 Sep 15;42:329-40
98. Wang Q, Xia Q, Wu Y, Zhang X, Wen F, Chen X, Zhang S, **Heng BC**, He Y, Ouyang HW. 3D-Printed Atsstrin-Incorporated Alginate/Hydroxyapatite Scaffold Promotes Bone Defect Regeneration with TNF/TNFR Signaling Involvement. *Adv Healthc Mater*. 2015 Aug; 4(11):1701-8.
99. Meng S, Zhang X, Xu M, **Heng BC**, Dai X, Mo X, Wei J, Wei Y, Deng X. Effects of deer age on the physicochemical properties of deproteinized antler cancellous bone: an approach to optimize osteoconductivity of bone graft. *Biomed Mater*. 2015 Jun 4; 10(3):035006.
100. Wang J, Wang J, Lu P, Cai Y, Wang Y, Hong L, Ren H, **Heng BC**, Liu H, Zhou J, Ouyang H. Local delivery of FTY720 in PCL membrane improves SCI functional recovery by reducing reactive astrogliosis. *Biomaterials*. 2015 Sep; 62:76-87.
101. Zhang C, Yuan H, Liu H, Chen X, Lu P, Zhu T, Yang L, Yin Z, **Heng BC**, Zhang Y, Ouyang H. Well-aligned chitosan-based ultrafine fibers committed teno-lineage differentiation of human induced pluripotent stem cells for Achilles tendon regeneration. *Biomaterials*. 2015 Jun; 53:716-30.
102. Liu H, Xu GW, Wang YF, Zhao HS, Xiong S, Wu Y, **Heng BC**, An CR, Zhu GH, Xie DH. Composite scaffolds of nano-hydroxyapatite and silk fibroin enhance mesenchymal stem cell-

based bone regeneration via the interleukin 1 alpha autocrine/paracrine signaling loop. *Biomaterials*. 2015 May;49:103-12.

103. Wu Y, Zhu S, Wu C, Lu P, Hu C, Xiong S, Chang J, **Heng BC**, Xiao Y, Hong Wei Ouyang. A Bi-Lineage Conductive Scaffold for Osteochondral Defect Regeneration. *Advanced Functional Materials*. Volume 24, Issue 28, pages 4473–4483, July 23, 2014
104. Yin Z, Chen X, Song HX, Hu JJ, Tang QM, Zhu T, Shen WL, Chen JL, Liu H, **Heng BC**, Ouyang HW. Electrospun scaffolds for multiple tissues regeneration in vivo through topography dependent induction of lineage specific differentiation. *Biomaterials*. 2015 Mar; 44:173-85.
105. Shen W, Chen X, Hu Y, Yin Z, Zhu T, Hu J, Chen J, Zheng Z, Zhang W, Ran J, **Heng BC**, Ji J, Chen W, Ouyang HW. Long-term effects of knitted silk-collagen sponge scaffold on anterior cruciate ligament reconstruction and osteoarthritis prevention. *Biomaterials*. 2014 Sep; 35(28):8154-8163.
106. Zhu S, Lu P, Liu H, Chen P, Wu Y, Wang Y, Sun H, Zhang X, Xia Q, **Heng BC**, Zhou Y, Ouyang HW. Inhibition of Rac1 activity by controlled release of NSC23766 from chitosan microspheres effectively ameliorates osteoarthritis development in vivo. *Ann Rheum Dis*. 2015 Jan; 74(1):285-93.
107. Zhang X, Xu M, Song L, Wei Y, Lin Y, Liu W, **Heng BC**, Peng H, Wang Y, Deng X. Effects of compatibility of deproteinized antler cancellous bone with various bioactive factors on their osteogenic potential. *Biomaterials*. 2013 Dec;34(36):9103-14.
108. Yin Z, Chen X, Zhu T, Hu JJ, Song HX, Shen WL, Jiang LY, **Heng BC**, Ji JF, Ouyang HW. The effect of decellularized matrices on human tendon stem/progenitor cells differentiation and tendon repair. *Acta Biomater*. 2013 Dec;9(12):9317-29.
109. Jiang Y, Chen L, Zhang S, Tong T, Zhang W, Liu W, Xu G, Tuan RS, **Heng BC**, Crawford R, Xiao Y, Ouyang HW. Incorporation of bioactive polyvinylpyrrolidone-iodine within bilayered collagen scaffolds enhances the differentiation and subchondral osteogenesis of MSCs. *Acta Biomater*. 2013 Sep;9(9):8089-98.
110. Zhang W, Chen J, Tao J, Hu C, Chen L, Zhao H, Xu G, **Heng BC**, Ouyang HW. The promotion of osteochondral repair by combined intra-articular injection of parathyroid hormone-related protein and implantation of a bi-layer collagen-silk scaffold. *Biomaterials*. 2013 Aug; 34(25):6046-57.
111. Zhang X, Cai Q, Liu H, **Heng BC**, Peng H, Song Y, Yang Z, Deng X. Osteoconductive effectiveness of bone graft derived from antler cancellous bone: an experimental study in the rabbit mandible defect model. *Int J Oral Maxillofac Surg*. 2012 Nov; 41(11):1330-7.
112. Ge Z, Li C, **Heng BC**, Cao G, Yang Z. Functional biomaterials for cartilage regeneration. *J Biomed Mater Res A*. 2012 Sep; 100(9):2526-36.
113. Das GK, Zhang Y, D'Silva L, Padmanabhan P, **Heng BC**, Loo JS, Selvan ST, Bhakoo KK, Tan TT. Single-Phase Dy₂O₃:Tb³⁺ Nanocrystals as Dual-Modal Contrast Agent for High Field Magnetic Resonance and Optical Imaging. *Chem. Mater.*, 2011, 23 (9), pp 2439–2446.

114. Shen W, Chen J, Yin Z, Chen X, **Heng BC**, Chen W, Ouyang HW. Incorporation of exogenous stromal cell-derived factor-1 alpha within a knitted silk-collagen sponge scaffold enhances tendon regeneration. *Biomaterials*. 2010 Oct;31(28):7239-49.
115. Chen JL, Yin Z, Shen WL, Chen X, **Heng BC**, Zou XH, Ouyang HW. Efficacy of hESC-MSCs in knitted silk-collagen scaffold for tendon tissue engineering and their roles. *Biomaterials*. 2010 Dec;31(36):9438-51.
116. Xia Y, Prawirasatya M, **Heng BC**, Boey F, Venkatraman SS. Seeding density matters: extensive intercellular contact masks the surface dependence of endothelial cell-biomaterial interactions. *J Mater Sci Mater Med*. 2011 Feb; 22(2):389-96.
117. Xiong S, Zhao X, **Heng BC**, Ng KW, Loo JS. Cellular uptake of Poly-(D,L-lactide-co-glycolide) (PLGA) nanoparticles synthesized through solvent emulsion evaporation and nanoprecipitation method. *Biotechnol J*. 2011 May; 6(5):501-8.
118. **Heng BC**, Xia Y, Shang X, Preiser PR, Law, SK, Boey FY, Venkatraman SS. Comparison of the adhesion and proliferation characteristics of HUVEC and two endothelial cell lines (CRL 2922 and CRL 2873) on various substrata. *Biotechnol. Bioprocess Eng*. 2011 16, 1:127-135.
119. **Heng BC**, Bezerra PP, Meng QR, Chin DW, Koh LB, Li H, Zhang H, Preiser PR, Boey FY, Venkatraman SS. Adhesion, proliferation, and gene expression profile of human umbilical vein endothelial cells cultured on bilayered polyelectrolyte coatings composed of glycosaminoglycans. *Biointerphases*. 2010 Sep; 5(3):FA53.
120. Das GK, **Heng BC**, Ng SC, White T, Loo JS, D'Silva L, Padmanabhan P, Bhakoo KK, Selvan ST, Tan TT. Gadolinium Oxide Ultranarrow Nanorods as Multimodal Contrast Agents for Optical and Magnetic Resonance Imaging. *Langmuir*. 2010 Jun 1; 26(11):8959-65.
121. Ge Z, Wang L, **Heng BC**, Tian XF, Lu K, Tai Weng Fan V, Yeo JF, Cao T, Tan E. Proliferation and Differentiation of Human Osteoblasts within 3D printed Poly-Lactic-co-Glycolic Acid Scaffolds. *J Biomater Appl*. 2009 May; 23(6):533-47.
122. Ge Z, Tian X, **Heng BC**, Fan V, Yeo JF, Cao T. Histological evaluation of osteogenesis of 3D-printed poly-lactic-co-glycolic acid (PLGA) scaffolds in a rabbit model. *Biomed Mater*. 2009 Apr; 4(2):21001.
123. Tian XF, **Heng BC**, Ge Z, Lu K, Rufaihah AJ, Fan VT, Yeo JF, Cao T. Comparison of osteogenesis of human embryonic stem cells within 2D and 3D culture systems. *Scand J Clin Lab Invest*. 2008; 68(1):58-67.
124. Zhang J, Cui J, Ling X, Li X, Peng Y, Guo X, **Heng BC**, Tong GQ. Vitrification of mouse embryos at 2-cell, 4-cell and 8-cell stages by cryotop method. *J Assist Reprod Genet*. 2009 Nov-Dec; 26(11-12):621-8.

125. Zhu D, Zhang J, Cao S, Zhang J, **Heng BC**, Huang M, Ling X, Duan T, Tong GQ. Vitrified-warmed blastocyst transfer cycles yield higher pregnancy and implantation rates compared with fresh blastocyst transfer cycles-time for a new embryo transfer strategy? *Fertil Steril*. 2011 Apr; 95(5):1691-5.
126. Ling XF, Zhang JQ, Cao SR, Chen J, Peng Y, Guo X, **Heng BC**, Tong GQ, Wang X. Effect of cryotop vitrification on preimplantation developmental competence of murine morula and blastocyst stage embryos. *Reprod Biomed Online*. 2009 Nov; 19(5):708-13.
127. **Heng BC**. Effect of Rho-associated kinase (ROCK) inhibitor Y-27632 on the post-thaw viability of cryopreserved human bone marrow-derived mesenchymal stem cells. *Tissue Cell*. 2009 Oct; 41(5):376-80.
128. **Heng BC**, Ye CP, Liu H, Toh WS, Rufaihah AJ, Yang Z, Bay BH, Ge Z, Ouyang HW, Lee EH, Cao T. Loss of viability during freeze-thaw of intact and adherent human embryonic stem cells with conventional slow-cooling protocols is predominantly due to apoptosis rather than cellular necrosis. *J Biomed Sci*. 2006 May; 13(3):433-45.
129. **Heng BC**, Kuleshova LL, Bested SM, Liu H, Cao T. The cryopreservation of human embryonic stem cells. *Biotechnol Appl Biochem*. 2005 Apr; 41(Pt 2):97-104.
130. **Heng BC**, Bested SM, Chan SH, Cao T. A proposed design for the cryopreservation of intact and adherent human embryonic stem cell colonies. *In Vitro Cell Dev Biol Anim*. 2005 Mar-Apr; 41(3-4):77-9.
131. **Heng BC**, Yu H, Ng SC. Strategies for the cryopreservation of microencapsulated cells. *Biotechnol Bioeng*. 2004 Jan 20; 85(2):202-13.
132. **Heng BC**, Ye CP, Liu H, Toh WS, Rufaihah AJ, Cao T. Kinetics of cell-death of frozen-thawed human embryonic stem cell colonies is reversibly slowed-down by exposure to low temperature. *Zygote*. 2006 Nov; 14(4):341-8.
133. **Heng BC**, Clement MV, Cao T. Caspase inhibitor Z-VAD-FMK enhances the post-thaw survival rate of Human embryonic stem cells cryopreserved with standard conventional slow-cooling protocols utilizing 10% (v/v) Dimethyl Sulfoxide (DMSO). *Biosci Rep*. 2007 Oct; 27(4-5):257-64.
134. **Heng BC**, Richards M, Cao T. Are stem cells inherently more prone to cryopreservation-induced apoptosis compared to ordinary somatic cells? *Hum Reprod*. 2009 Feb; 24(2):492; author reply 492-3.
135. Vinoth KJ, Manikandan J, Sethu S, Balakrishnan L, **Heng A**, Lu K, Hande MP, Cao T. Evaluation of human embryonic stem cells and their differentiated fibroblastic progenies as cellular models for in vitro genotoxicity screening. *J Biotechnol*. 2014 Aug 20;184:154-68.
136. Vinoth KJ, Manikandan J, Sethu S, Balakrishnan L, **Heng A**, Lu K, Poonepalli A, Hande MP, Cao T. Differential resistance of human embryonic stem cells and somatic cell types to hydrogen

peroxide-induced genotoxicity may be dependent on innate basal intracellular ROS levels. *Folia Histochem Cytobiol.* 2015;53(2):169-74

137. Ng KW, Khoo SP, **Heng BC**, Setyawati MI, Tan EC, Zhao X, Xiong S, Fang W, Leong DT, Loo JS. The role of the tumor suppressor p53 pathway in the cellular DNA damage response to zinc oxide nanoparticles. *Biomaterials.* 2011 Nov;32(32):8218-25.
138. Zhao X, Ng S, **Heng BC**, Guo J, Ma L, Tan TT, Ng KW, Loo SC. Cytotoxicity of hydroxyapatite nanoparticles is shape and cell dependent. *Arch Toxicol.* 2013 Jun;87(6):1037-52.
139. **Heng BC**, Zhao X, Tan EC, Khamis N, Assodani A, Xiong S, Ruedl C, Ng KW, Loo JS. Evaluation of the cytotoxic and inflammatory potential of differentially shaped zinc oxide nanoparticles. *Arch Toxicol.* 2011 Dec;85(12):1517-28.
140. **Heng BC**, Zhao X, Xiong S, Ng KW, Boey FY, Loo JS. Cytotoxicity of zinc oxide (ZnO) nanoparticles is influenced by cell density and culture format. *Arch Toxicol.* 2011 Jun;85(6):695-704.
141. **Heng BC**, Das GK, Zhao X, Ma LL, Tan TT, Ng KW, Loo JS. Comparative cytotoxicity evaluation of lanthanide nanomaterials on mouse and human cell lines with metabolic and DNA-quantification assays. *Biointerphases.* 2010 Sep;5(3):FA88.
142. **Heng BC**, Zhao X, Xiong S, Ng KW, Boey FY, Loo JS. Toxicity of zinc oxide (ZnO) nanoparticles on human bronchial epithelial cells (BEAS-2B) is accentuated by oxidative stress. *Food Chem Toxicol.* 2010 Jun;48(6):1762-6.
143. **Heng BC**, Richards M, Shu Y, Gribbon P. Induced pluripotent stem cells: a new tool for toxicology screening? *Arch Toxicol.* 2009 Jul;83(7):641-4.
144. George S, **Heng BC**, Vinoth KJ, Kishen A, Cao T. Comparison of the response of human embryonic stem cells (hESC) and their differentiated progenies to oxidative stress. *Photomed Laser Surg.* 2009 Aug;27(4):669-74.
145. Cao T, Saw TY, **Heng BC**, Liu H, Yap AU, Ng ML. Comparison of different test models for the assessment of cytotoxicity of composite resins. *J Appl Toxicol.* 2005 Mar-Apr;25(2):101-8.
146. Vinoth KJ, **Heng BC**, Poonepalli A, Banerjee B, Balakrishnan L, Lu K, Hande MP, Cao T. Human embryonic stem cells may display higher resistance to genotoxic stress as compared to primary explanted somatic cells. *Stem Cells Dev.* 2008 Jun;17(3):599-607.
147. Cao T, Lu K, Fu X, **Heng BC**. Differentiated fibroblastic progenies of human embryonic stem cells for toxicology screening. *Cloning Stem Cells.* 2008 Mar;10(1):1-10.
148. Zhao X, **Heng BC**, Xiong S, Guo J, Tan TT, Ng KW, Loo JS. In Vitro Assessment of Cellular Responses to Rod-Shaped Hydroxyapatite Nanoparticles of Various Length. *Nanotoxicology.* 2011 Jun;5:182-94.

149. Zhou L, Wang P, Zhang J, **Heng BC**, Tong GQ. ING2 (inhibitor of growth protein-2) plays a crucial role in preimplantation development. *Zygote*. 2016 Feb;24(1):89-97.
150. Tong GQ, Cao SR, Wu X, Zhang JQ, Cui J, **Heng BC**, Ling XF. Clinical outcome of fresh and vitrified-warmed blastocyst and cleavage-stage embryo transfers in ethnic Chinese ART patients. *J Ovarian Res*. 2012 Oct 5;5(1):27.
151. Zhang JQ, Li XL, Peng YZ, Guo XR, **Heng BC**, Tong GQ. Reduction in the frequency of microscopic examination of human embryos outside the incubator enhances embryo quality and increases blastocyst formation rate. *Reprod Biomed Online*. 2010 Apr;20(4):510-515.
152. Tong GQ, **Heng BC**, Tan LG, Ng SC. Aberrant profile of gene expression in cloned mouse embryos derived from donor cumulus nuclei. *Cell Tissue Res*. 2006 Aug;325(2):231-43.
153. **Heng BC**, Stojkovic M, Vajta G, Cao T. Mammalian oocyte polarity can be exploited for the automation of somatic cell nuclear transfer - in the development of a 'cloning biochip'. *Med Hypotheses*. 2006;67(2):420-1.
154. Tong GQ, **Heng BC**, Chen NQ, Yip WY, Ng SC. Effects of elevated temperature in vivo on the maturational and developmental competence of porcine germinal vesicle stage oocytes. *J Anim Sci*. 2004 Nov;82(11):3175-80
155. **Heng BC**, Tong GQ, Ng SC. Effects of granulosa coculture on in-vitro oocyte meiotic maturation within a putatively less competent murine model. *Theriogenology*. 2004 Sep 15;62(6):1066-92.
156. Tong GQ, **Heng BC**, Ng SC. Exposure of mouse cumulus cell nuclei to porcine ooplasmic extract eliminates TATA box protein binding to chromatin, but has no effect on DNA methylation. *J Assist Reprod Genet*. 2006 Nov-Dec;23(11-12):413-9.
157. Tong GQ, **Heng BC**, Ng SC. Cumulus-specific genes are transcriptionally silent following somatic cell nuclear transfer in a mouse model. *J Zhejiang Univ Sci B*. 2007 Aug.;8(8):533-539.
158. **Heng BC**, Gribbon PM, Day AJ, Hardingham TE. Hyaluronan binding to link module of TSG-6 and to G1-domain of aggrecan is differently regulated by pH. *J Biol Chem*. 2008 Nov 21;283(47):32294-301.
159. Gribbon P, **Heng BC**, Hardingham TE. Novel confocal-FRAP analysis of carbohydrate-protein interactions within the extracellular matrix. *Methods Mol Biol*. 2001;171:487-94.
160. Gribbon P, **Heng BC**, Hardingham TE. The analysis of intermolecular interactions in concentrated hyaluronan solutions suggest no evidence for chain-chain association. *Biochem J*. 2000 Aug 15;350 Pt 1:329-35.
161. Gribbon P, **Heng BC**, Hardingham TE. The molecular basis of the solution properties of hyaluronan investigated by confocal fluorescence recovery after photobleaching. *Biophys J*. 1999 Oct;77(4):2210-6.

162. Hardingham T, **Heng BC**, Gribbon P. New approaches to the investigation of hyaluronan networks. *Biochem Soc Trans.* 1999 Feb;27(2):124-7.
163. **Heng BC**, Link N, Fussenegger M. CHAPTER 15: Tissue Engineering Design and Application of Synthetic Biology Systems for Therapy. Book Chapter in: “Molecular Biology and Biotechnology : Edition 6”. Edited by Ralph Rapley and David Whitehouse. Royal Society of Chemistry, 2016. ISBN: 978-1-84973-795-1. <http://pubs.rsc.org/en/content/ebook/978-1-84973-795-1#!divbookcontent>
164. **Heng BC**, Fussenegger M. The Synthetic Biology Approach to Stem Cells and Regenerative Medicine. Book Chapter in: “Encyclopedia of Molecular Cell Biology and Molecular Medicine”. Edited by Robert A. Meyers. John Wiley & Sons, Inc., 2014. ISBN: 9783527600908. <http://onlinelibrary.wiley.com/doi/10.1002/3527600906.mcb.20120067/abstract>
165. **Heng BC**, Fussenegger M. Design and Application of Synthetic Biology Devices for Therapy. Book Chapter in: “Synthetic Biology – Tools and Applications” Edited by Huimin Zhao. Academic Press Inc., 2013. ISBN: 9780123944306. <http://store.elsevier.com/Synthetic-Biology/isbn-9780123944306/>
166. Ouyang H, Zou X, **Heng BC**, Shen W. Mesenchymal Stem Cells for Bone Repair. Book Chapter in: “Essentials of Mesenchymal Stem Cell Biology and Its Clinical Translation, pp 199-200.” Edited by Robert Chunhua Zhao; Springer Science & Business Inc., 2013. ISBN: 978-94-007-6716-4. <http://link.springer.com/book/10.1007/978-94-007-6716-4/page/1>
167. Tan GM, Ye L, Shim WS, Haider HK, **Heng ABC**, Chua T, Koh TH, Sim EK. Tissue engineering for the infarcted heart: cell transplantation therapy. Book Chapter in: “CARDIAC PERFUSION AND PUMPING ENGINEERING, pp 477-540.” Edited by Dhanjoo N Ghista & Eddie Yin-Kwee Ng. World Scientific Book Inc., Singapore, July 2007. eISBN: 9789812775597. http://ebooks.worldscinet.com/ISBN/9789812775597/9789812775597_0016.html
168. Jiang YZ, Tong T, **Heng BC**, Ouyang HW. Cartilage injuries: Role of implantation of Human stem/progenitor cells. Book Chapter in: “Stem Cells and Cancer Stem Cells, Volume 3: Therapeutic Applications in Disease and Injury, pp327-333.” Edited by M.A. Hayat; Springer Inc, NY, USA, 2012. DOI: 10.1007/978-94-007-2415-0. <http://www.springerlink.com/content/978-94-007-2414-3/#section=990553&page=1>
169. Zi Y, Xiao C, **Heng BC**, Ouyang HW. Tendon injury: role of differentiation of adult and embryonic derived stem cells. Book Chapter in: “Stem Cells and Cancer Stem Cells, Volume 4: Therapeutic Applications in Disease and Injury, pp 87-95.” Edited by M.A. Hayat; Springer Inc, NY, USA, 2012. DOI: 10.1007/978-94-007-2828-8. <http://www.springerlink.com/content/978-94-007-2828-8#section=1031832>
170. Hui ZX, Liang SW, **Heng BC**, Ouyang HW. Bone reconstruction utilizing mesenchymal stem cell sheets for cell delivery. Book Chapter in: “Stem Cells and Cancer Stem Cells, Volume 5: Therapeutic Applications in Disease and Injury, pp 131-135.” Edited by M.A. Hayat; Springer Inc, NY, USA, 2012. DOI: 10.1007/978-94-007-2900-1. <http://www.springerlink.com/content/978-94-007-2900-1#section=1037654&page=1>

171. WO2010028087 - NANOPARTICLE-STEM CELL CONJUGATES FOR POST-INFARCTION TREATMENT. Pub. No.: WO/2010/028087; International Application No.: PCT/US2009/055784; Publication Date: 11.03.2010; International Filing Date: 02.09.2009. Inventors: **HENG, Boon, Chin, Alexis**; (US); BASU, Shubhayu; (US); COWAN, Catherine, M.; (US); DAVALIAN, Dariush; (US). STANKUS, John; (US). DUONG, Duc, H.; (US).
<http://www.wipo.int/patentscope/search/en/WO2010028087>