Fisher Broyles

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Practice Areas: Intellectual Property; Patent Prosecution; Strategic IP Counseling

Bar Admissions: U.S. Patent & Trademark Office

Education: Shanxi Medical University, Medical Degree, 2004; National University of Singapore, Ph.D. in Bioengineering, 2009

Experience: Morrison & Foerster LLP; Morgan, Lewis & Bockius LLP

Cathy brings her interdisciplinary academic background in medicine, life science and bioengineering to her active intellectual property (IP) practice. Cathy focuses on patent drafting and prosecution in the U.S. and foreign jurisdictions, freedom to operate (FTO) analysis, IP due diligence, invalidity and patentability searches and analyses in a spectrum of biotechnological areas. Her areas of expertise are immunology, biochemistry, antibody therapeutics, cancer immunotherapies, protein engineering, cellular therapies, tissue engineering, and gene editing.

Prior to joining FisherBroyles, Cathy was a patent agent at two international law firms where she drafted and filed patent applications, managed global patent portfolios, developed commercially relevant patent claiming and disclosing strategies, performed search and analysis on patentability and FTO, and provided counseling service to clients on patent claiming and prosecution strategies, portfolio management, patentability, FTO and due diligence.

Cathy received her Ph.D. from National University of Singapore (NUS) in Singapore, where she worked on Biomimetic Nanofiber/Stem Cell Composite for Skin Graft Application. She received her Medical Degree from Shanxi Medical University in China. Cathy has also completed postdoctoral fellowships in the Department of Mechanical Engineering (Biomechanical Engineering Program) and then School of Medicine at Stanford university in California. She is fluent in English and Mandarin Chinese.

Presentations & Teaching Experience

- Ma K, Titan AL, Stafford M, Zheng C, Levenston ME (2012). Variations in chondrogenesis of human bone marrow-derived MSCs in Fibrin/Alginate blended hydrogels. Segal North Osteoarthritis Workshop (SNOW) V, Chicago, IL (Poster Presentation).

- Ma K and Levenston ME (2012). Variations in gene expression of MSCs during chondrogenic differentiation in fibrin/alginate blended gels. Orthopaedic Research Society (ORS) Annual Meeting, San Francisco, CA (Poster Presentation).

- Ma K, Lin CL, Gutierrez CSA and Levenston ME (2012). Effects of one-sided nutrient supply and air exposure on MSC chondrogenesis. Orthopaedic Research Society (ORS) Annual Meeting, San Francisco, CA (Poster Presentation).

- Ma K, Stafford M, Chau MWR, Titan AL and Levenston ME (2011). Fabrication and characterization of fibrin/alginate blended hydrogels for human MSC chondrogenesis. Orthopaedic Research Society (ORS) Annual Meeting, Long Beach, CA (Oral Presentation).

- Ma K, Stafford M, Chau MWR, Titan AL and Levenston ME (2010). Variations in matrix composition of fibrin/alginate hydrogels for chondrogenesis of human bone marrow stromal cells. The TERMIS-NA 2010 Annual Conference & Exposition, Orlando, FL (Oral Presentation).

- Ma K, Chan KC and Ramakrishna S (2008). Biomimetic nanofiber scaffolds for efficient adhesion of mesenchymal stem cells in skin graft application. The TERMIS-NA Annual Conference & Exposition, San Diego, CA (Poster Presentation).

- Ma K, Hwang WYK, Feng Q, Chan KC and Ramakrishna S (2007). Modification and characterization of blended nanofiber substrates as skin grafts for the capture of bone marrow-derived hematopoietic stem cells. Materials and Processes for Medical DevicesTM (MPMDTM) Conference and Exposition, Palm Spring, CA (Oral presentation).

- Ma K, Yong T, Chan KC and Ramakrishna S (2007). Collagen-blended biodegradable polymer nanofibers: potential substrates for wound healing in skin tissue engineering. The Fifth IASTED International Conference on Biomedical Engineering, Innsbruck, Austria (Oral Presentation).

Publications

- Ma K, Kwon SH, Padmanabhan J, Duscher D, Trotsyuk AA, Dong Y, Inayathullah M, Rajadas J, Gurtner GC (2018). Controlled delivery of a focal adhesion kinase inhibitor results in accelerated wound closure with decreased scar formation. The Journal of Investigative Dermatology. 138(11): 2452-2460.

- Liu W, Ma K, Kwon, SH, Garg R, Patta YR, Fujiwara T and Gurtner G (2016). The abnormal architecture of healed diabetic ulcers is the result of FAK degradation by Calpain 1. The Journal of Investigative Dermatology. 137(5):1155-1165.

- Ma K, Titan AL, Stafford M, Zheng C and Levenston ME (2012). Variations in chondrogenesis of human bone marrow-derived mesenchymal stem cells in Fibrin/Alginate blended hydrogels. Acta Biomaterialia. 8(10):3754-3764.

- Ma K, Liao S, He LM, Lu J, Ramakrishna S and Chan KC (2011). Effects of nanofiber/stem cell composite on wound healing in acute full-thickness skin wounds. Tissue Engineering Part A. 17(9):1413-1424. (Rated as a top-downloaded article in 2013 by Mary Ann Liebert, Inc. Publishers)

- He LM, Liao S, Quan D, Ma K, Chan KC, Ramakrishna S and Lu J (2010). Synergistic effects of electrospun PLLA fiber dimension and pattern on neonatal mouse cerebellum C17.2 stem cells. Acta Biomaterialia. 6(8):2960-2969.

- Ma K, Laco F, Ramakrishna S, Liao S and Chan KC (2009). Differentiation of bone marrow-derived mesenchymal stem cells into multi-layered epidermis-like cells in 3D organotypic coculture. Biomaterials. 30:3251-3258.

- Ma K, Chan KC and Ramakrishna S (2009). Textile-based scaffolds for tissue engineering. In: Rajendran S, editor. Advanced textiles for wound care. Woodhead Publishing Limited. UK. 289-321.

- Filip L, Ma K, Hans JW, Ramakrishna S and Chan KC (2009). The dose effect of human bone marrow-derived mesenchymal stem cells during epidermal development in organotypic co-culture. Journal of Dermatological Science. 55(3):150-160.

- Ramakrishna S, Liao S, Ma K and Chan KC (2009). Engineered nanofibers with stem cells for biomimetic tissue engineering. Ceramic Transactions. 206:129-133.

- Ma K, Chan KC, Liao S, Hwang WYK, Feng Q and Ramakrishna S (2008). Electrospun nanofiber scaffolds for rapid and rich capture of bone marrow-derived hematopoietic stem cells. Biomaterials. 29:2096-2103.