

Fisher Broyles

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

Bar Admissions: Maryland; District of Columbia; U.S. Patent & Trademark Office (USPTO)

Education: George Washington University, JD, 2016; Nanjing University, BS, 2004; University of Texas Health Science Center, PhD, 2011

Experience: Squire Patton Boggs; Wilson Sonsini Goodrich & Rosati

Xiaoban Xin focuses his practice on patent prosecution and portfolio development, strategy and due diligence. He has extensive experience preparing, prosecuting and evaluating patents in a broad range of technical areas in the life sciences sector, including biologics (e.g., antibodies, peptides, RNAs, etc.), gene editing (e.g., CRISPR-Cas), cell therapy, drug delivery vehicles, next generation sequencing and small molecules. He also has worked with medical devices, chemical engineering and materials, energy and clean tech, mechanical engineering and health IT.

Xiaoban reviews each client's business and technology with a critical eye so he can bring a detailed understanding of the science at issue. He believes in partnering with his clients to formulate the patent strategy that best suits their business objectives. He regularly works with in-house counsel, senior management and technology transfer office managers, and often serves as the link between inventor and marketplace.

Xiaoban provides due diligence for commercial transactions, including evaluation of the strength, scope and potential of patents of prospective partners and competitors, as well as general diligence in support of investment or mergers and acquisitions projects.

Xiaoban has been extensively involved in prior art search and analysis, invalidity, non-infringement position development, and drafting briefs in support of patent litigation, including USPTO proceedings, and court and ITC litigations.

Prior to his legal career, Xiaoban gained extensive experience in biomedical research. Xiaoban holds a Ph.D. in cellular and molecular biology and completed a technology transfer fellowship with The National Institute of Allergy and Infectious Diseases at the National Institutes of Health, and a post-doctoral research fellowship with The Johns Hopkins University School of Medicine.

During his studies at George Washington University Law School, Xiaoban served as editor of the American Intellectual Property Law Association Quarterly Journal.

Xiaoban is fluent in Mandarin Chinese.

Presentations & Teaching Experience

- Speaker, "Strategies of patenting antibody drug conjugates in the U.S.," IP Link Workshop, January, 2026.
- Speaker, "High-value Patent Strategies in Life Sciences From a Global Perspective", Merits & Tree IP Conference, March 2024.
- Speaker, "Patent Strategies for Growth Stage Companies," H7 BioCapital Healthcare Workshop, November 2023.
- Speaker, "What Startup Founders Should Know about Patents," MIT Chinese Entrepreneur Organization, 1 October 2023.
- Speaker, "Patent Strategies for Chinese Antibody Companies Exploring the U.S. Market," 2022 Antibody Drug Industry Summit, China, 3 August 2022.
- Speaker, "Patent Strategy for Biotech Companies," MedLab InnoTalk, 8 March 2022.

Publications

- Key Tips For Patenting Antibody-Drug Conjugate Inventions. Expert Analysis, Law360. July 2026.
- Patent Eligibility of 3D-Printed Organs. AIPLA Quarterly Journal, Vol. 44, No. 1, 2016
- Tan Y, Xin X, Coffey FJ, Wiest DL, Dong LQ, Testa JR. Appl1 and Appl2 are Expendable for Mouse Development but Are Essential for HGF-Induced Akt Activation and Migration in Mouse Embryonic Fibroblasts. J Cell Physiol. (2016) 231(5):1142-50.
- Babapoor-Farrokhran S, Jee K, Puchner B, Hassan SJ, Xin X, et al. Angiopoietin-like 4 is a potent angiogenic factor and a novel therapeutic target for patients with proliferative diabetic retinopathy. Proc Natl Acad Sci U S A. (2015) 112(23):E3030-9.
- Ryu J, Galan AK, Xin X, et al. APPL1 potentiates insulin sensitivity by facilitating the binding of IRS1/2 to the insulin receptor. Cell Rep., (2014) 7(4): 1227-38.

- Xin X, Rodrigues M, Umapathi M et al. Up-regulation of Angiopoietin-like 4 Promotes Vascular Permeability in Ischemic Retinal Disease. *Proc. Natl. Acad. Sci U S A.* (2013) 110(36): E3425-34.
- Rodrigues M, Xin X, et al. VEGF Secreted by Hypoxic Müller Cells Induces MMP-2 Expression and Activity in Endothelial Cells to Promote Retinal Neovascularization in Proliferative Diabetic Retinopathy. *Diabetes* (2013) 62(11):3863-73.
- Xin X, Zhou L, Reyes CM, Liu F, Dong LQ. APPL1 mediates adiponectin-stimulated p38 MAPK activation by scaffolding the TAK1-MKK3-p38 MAPK pathway. *Am. J. Physiol. Endocrinol. Metab.* (2011) 300(1): E103-10
- Wang C, Xin X, Xiang R, Ramos FJ, Liu M, Lee HJ, Chen H, Mao X, Kikani CK, Liu F, and Dong LQ. Yin-Yang regulation of adiponectin signaling by APPL isoforms in muscle cells. *J. Biol. Chem.*, (2009) 284(46): 31608-31615
- Wang C, Liu M, Riojas RA, Xin X, Gao Z, Zeng R, Wu J, Dong LQ, and Liu F. PKC(θ)-dependent phosphorylation of PDK1 at SER504 and SER532 contributes to palmitate-induced insulin resistance. *J. Biol. Chem.*, (2009) 284(4): 2038-2044.
- Liu M, Zhou L, Xu A, Lam KS, Wetzel MD, Xiang R, Zhang J, Xin X, Dong LQ, and Liu F. A disulfide-bond A oxidoreductase-like protein (DsbA-L) regulates adiponectin multimerization. *Proc. Natl. Acad. Sci. U S A* (2008) 105(47): 18302-18307.

Awards and Recognitions

- JD Supra: Top Authors in Life Sciences, 2021