WILSON SONSINI

Payal Vyas

PATENT AGENT

Patents and Innovations

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FOCUS AREAS

Intellectual Property

Life Sciences

Patents and Innovations

EXPERIENCE

Dr. Payal Vyas is a patent agent in the Boston office of Wilson Sonsini Goodrich & Rosati, where she is a member of the patents and innovations practice. Payal has diverse scientific expertise in a variety of fields and emerging technologies including molecular and cell biology, gene editing and therapy, biochemistry, biophysics, microbiology, microscopy, cancer biology, and cardiovascular sciences.

Payal completed her postdoctoral training at The Center for Interdisciplinary Cardiovascular Sciences (CICS) at Harvard Medical School and the Brigham and Women's Hospital, where she led research projects focused on discovery of therapeutic targets and drug development for cardiac calcification using high throughput proteomic and transcriptomic approaches.

Before joining CICS, Payal was a research fellow at Massachusetts General Hospital, Broad institute, and Harvard Medical School. In this role, she studied drug resistance and dormancy in solid tumors. Payal was part of the patent law and technology commercialization internship program at Partners HealthCare Innovation, where she assessed patentability and commercialization potential of technologies developed at Harvard Medical School and affiliated hospitals.

Prior to joining the firm, Payal was a patent specialist in the Boston office of Nixon Peabody LLP. In this role, she gained experience in drafting and prosecution of patent applications related to CRISPR-Cas9, RNA interference, cancer biology, stem cells, immunotherapy, tissue regeneration, and the discovery of diagnostics and therapeutics using machine learning. During her doctoral studies, she studied chromatin structure and function and developed live-cell imaging approaches to visualize and measure histone dynamics.

CREDENTIALS

Education

- Postdoctoral Fellowship, Cardiovascular Sciences, Harvard Medical School, Brigham and Women's Hospital in collaboration with Kowa Biopharmaceuticals Ltd, 2015
- Research Fellowship, Cancer Biology, Harvard Medical School, Massachusetts General Hospital and Broad Institute, 2013
- Ph.D., Biochemistry, University of Mississippi Medical Center, 2012
- M.S., Biophysics, University of Mumbai, India, 2004
- B.S., Microbiology, University of Mumbai, India, 2001

Admissions

- U.S. Patent and Trademark Office

INSIGHTS

Select Publications

- Co-author, "Calcific Aortic Valve Disease: Pathobiology, Basic Mechanisms, and Clinical Strategies," *In: Sacks M., Liao J. (eds) Advances in Heart Valve Biomechanics. Springer, Cham* 153-179, 2018
- Co-author, "Spatiotemporal multi-omics mapping generates a molecular atlas of the aortic valve and reveals networks driving disease," 138 (4) *Circulation* 377-93, 2018
- Co-author, "Quantification of calcified particles in human valve tissue reveals asymmetry of calcific aortic valve disease development," 3(44) *frontiers in Cardiovascular Medicine* 1-10, 2016
- Co-author, "The N- and C-terminal domains determine the differential nucleosomal binding geometry and affinity of linker histone isotypes $H1^0$ and H1c," 287(15) *Journal of Biological Chemistry* 11778-87, 2012

TECHNICAL FLUENCY

Biological Sciences and Biotechnology

- Antibody
- Antigen presentation
- Biochemistry
- Biologics
- Cancer biology
- Cancer therapeutics
- CAR-T cells
- Cell biology
- Cell culture products
- Cell therapy
- Cellular biology
- Cellular immunology
- Epigenetics
- Genetics
- Host-pathogen interactions
- Immuno-oncology
- Immunobiology
- Immunology
- Microbiology
- MicroRNA (miRNA) research
- Molecular biology
- Molecular genetics
- Neurobiology
- Phage Therapy
- Proteomics
- Stem cell biology
- T and B cell biology
- T cell biology
- T cell immunology
- Virology

Therapeutics and Drug Discovery

- CRISPR
- Drug delivery
- Gene editing
- Gene therapy
- Immunotherapy targets
- Peptide therapeutics
- RNA interference (RNAi)
- Vaccines

Miscellaneous

- Cancer
- COVID 19
- Human factors engineering
- Infectious diseases