**Academic Resume, 2025-01-08**

**Xinghua Pan, PhD, MD, Professor**

Born in May 1963, in China.

Naturalized US citizenship as an alien of extraordinary ability (EB1a)

Permanent Resident Visa in China

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<https://scholar.must.edu.mo/scholar/106820>, Macau Univ of Science and Technology

<https://portal.smu.edu.cn/jcyxy/info/1114/2389.htm>, SMU official website:

**EDUCATIONS AND TRAININGS**

**Postdoc Associate, Postdoc Fellow (term #2) in Genomics 1997-1999**

Department of Genetics, Yale University School of Medicine, New Haven, CT, USA

**Project**: Development of a method for genome-wide mutation scanning based on enzymatic mismatched-DNA capture, differential gel display and Sanger sequencing (GADAV); Cloning, modification, over-expression, purification and characterization of thymine DNA glycosylases, MutS, H and L, and endonucleases V and VII for mutation scanning and gene cloning method Allele Frequency Distortion.

**Supervisor**: Dr. Sherman Weissman, a member of National Academy of Sciences, USA (NAS USA), and Sterling Professor of Yale University.

**Postdoc Associate, Postdoc Fellow (term #1) in Molecular Oncology 1993-1994**

National Laboratory of Molecular Oncology, Cancer Institute and Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College (CAMS & PUMC), Beijing, China.

**Project**: Cloning and Charecterization of candidate tumor suppressing genes (esp. RA538).

**Supervisor**: Dr. Min WU, a Member of Chinese Academy of Sciences (CAS), China.

Participated UICC (International Union Against Cancer) training course on molecular oncology in Melbourne University and Ludwig Cancer Institute, Australia, with UICC Scholarship, 1994.

**Ph.D. in Human Genetics 1989-1993**

National Laboratory of Genetic Engineering, Institute of Genetics, and Department of Genetics and Genetic Engineering, School of Life Science, Fudan University, Shanghai, China.

**Dissertation**: Genetic susceptibility of HLA-DQA alleles to 3 autoimmune diseases (systemic lupus erythematosus, myasthenia gravis, high myopia); and Molecular evolution of MHC.

**Supervisor**: Dr. JiaZhen Tan (CC Tan), an Academician of CAS, and a foreign member of NAS USA, the founder of Fudan University Institute of Genetics, and Department of Genetics. He was president of the Genetics Society of China, the Environmental Mutagens Society of China, and the Biotechnology Society of China. He was an officer, usually vice president, of the International Genetics Congress. Prof. Dr. Zhenchen Geng was the secondary supervisor of Dr. Pan.

**M.M. (MSc).** (Master of Medicine) **in Cytogenetics 1985-1988**

Department of Basic Medicine, Southern Medical University (previous name: The First Military Medical University, or FMMU), Guangzhou, China.

**Supervisor**: Prof. Lin He

Visiting and being trained for 1 month at Peking University Department of Biology (1987).

**Bachelor of Medicine (M.D. equivalent)**  **1980-1985**

Southern Medical University (SMU, and previous FMMU), Guangzhou, China, including an Internship at Nanfang Hospital (1 year, 1984-1985)

**WORKING EXPERIENCES**

**Precision Regenerative Medicine Research Center (MRDRC), Medical Science Division (MSD) and State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology (MUST), Macao 999078, China**

**Professor 2024.8-Present**

**Dept Biochemistry and Molecular Biology (previously called as, and known as: Institute of Genetic Engineering), School of Basic Medical Sciences, Southern Medical University (SMU),** Guangzhou, Guangdong Province, China

**Distinguished Professor 2016-2024**

(2016-03-01 to 2017-02-28 acted as a consultant)

Head, Department Biochemistry and Molecular Biology (BMB) (2 terms) 2016-2023.12

Head, Guangdong Pearl River Scholar for BMB (2 terms) 2019-2024

Director, Guangdong Province Key Lab of Biochip 2016-2017

Director, Guangdong Province Key Lab of Sing Cell Tech & App 2017-now

Member, Academic Committee of SMU School of Basic Med Sciences (2 terms) 2017-now

Joint PI of South China Infectious Disease Prevention and Control Key Laboratory (in SMU Nanfang Hospital) of China Ministry of Education.

Joint PI of Key Laboratory of Mental Health (in SMU) of China Ministry of Education.

Open Project PI of Shenzhen Bay Laboratory.

Adjunct Professor of SMU affiliated Nanfang Hospital, Zhujiang Hospital, the First People's Hospital of Guangdong Province, and Dongguan Maternal and Child Health Hospital.

Visiting Professor of Sichuan University/West China Medical College, Jiujiang University, Guangdong Pharmaceutical University.

Adjunct Scientist of Hangzhou Cancer Hospital (2014-2017).

* Management of dept faculty in variant of fields: research, teaching, faculty recruiting and training, services, and being responsible for other department affairs (safety, hygiene, attendance).
* Managing dept teaching mission for undergraduates and graduates (~10000 hours/yr).
* Personally, giving lecture around 65 class hours for ~1,500 students/year, for Introduction of BMB, Omics and Single Cell Technology, Medical Research and Development.
* Personally, training PhD and MS candidates, postdoctors and undergraduates.
* Personally leading researches: method development for multiplex single cell DNA methylation sequencing, multiplex single cell CNV sequencing, multiplex micro-bulk RNA sequencing, single cell co-measurement of RNA and telomere length; single cell omics study for variants of tumors (osteosarcoma, lung cancers, colorectal cancer /CRC, esophageal cancer, gastric cancer, hepatocarcinoma, thyroid cancer, acute myeloid leukemia /AML, acute lymphoid leukemia /ALL, myelodysplastic syndrome /MDS, for their heterogeneity, evolution, biomarker, tumor microenvironment, stem cell and plasticity), stem cells (hematopoietic stem cells /HSC, mesenchymal stem cells /MSC, induced pluripotent stem cell /iPSC, hair follicle stem cell), organoids (brain cortex organoid, ovary organoid); functional regeneration of ovary, liver regeneration; immune system; application of single cell technology in cancer liquid biopsy (esp. circulating cancer cells /CTCs); genetic test for preimplantation and prenatal fetus.

**Dept Genetics, School of Medicine, Yale University,** New Haven, CT

**Consultant** 2017-2019

**Research Scientist** **2014-2016**

**Associate Research Scientist** 2004-2014

A joint Research Scientist of Yale Center Excellence in Genomic Sciences, Yale Cancer Center, Yale Stem Cell Center, and Boyer Center for Molecular Medicine.

As a **Project PI and a team leader** (5-8 team members in most of the time), working with Dr. Sherman Weissman (a member of NAS USA and Yale Sterling Professor) and collaborating with Dr. Michael Snyder (a member of NAS USA, Yale and Stanford Univ Genetics Prof.), leading ~ 10 national-wide and international collaborative projects, including:

* A key member in NIH major projects such as ENCODE of human genomics, key project of stem cells and cancers; a PI for NIH R21 project and polit project.
* As one of the earliest explorers for innovation of technology for single cell analysis. Designing and development of Whole DNA Pool Amplification for single cells (WPA), single cell full length RNA-seq (2 methods: PMA and SMA), single cell DNA methylation sequencing (scCGI-seq), single cell closed-chromatin sequencing, single cell telomere length measurement (SCT-pqPCR), the 1st method for single cell multiomics (simultaneous sequencing of DNA and RNA in a single cell), etc.
* Study of stem cells, immune system, tumors and other diseases, such as: HSC, iPSC, MSC, CRC, melanoma, aging; stem cell renewal and differentiation; CRISPR/cas9 analysis of gene regulation network.

**Molecular Staging, Inc. (MSI,** acquired by **Qiagen** in 2004),New Haven, CT

Working with Dr. Roger Lasken (RD Director and Section Head)

**Research Scientist** and **Enzymology Leader** (Genomics section) **2000-2004**

* Method and kit development (REPLIg) for whole genome amplification based on MDA (multiple displacement amplification) and RCA (rolling circle amplification) strategies with phi29 DNA polymerase (product transferred to Qiagen, and being used worldwide);
* Research support for Section of Genomics and Section of Proteomics: designed / conducted enzyme unit assay, activity features, thermo-stabilization, and shelf-life studies for phi29 DNA polymerase, and many other enzymes/antibodies/reagents.
* Meanwhile, as a Visiting Research Scientist at Yale University Dept Genetics for the RD.

**Dept Biology (Cell Biology and Genetics), Navy Medical University**, Shanghai, China

**Associate Professor** (Executive Director for Research) **1995-1997**

* Conceiving projects, securing funds, and directing research on molecular oncology (gene p53 and nm23, EBV bhrf1), on establishment of disease model (whole HBV genome, nm23 gene for cancer metastasis) and dissection of gene function with transgenic mouse and knockout mouse.
* Conduction of courses in Medical Genetics, and Medical Cell Biology for Bachelor of Medicine (M.D. equivalent), MS and PhD students, and practically co-supervised 2 Ph.D., 3 M.Sc. Candidates.
* Being supported by Cold Spring Harbor Laboratory (CSHL, NY, USA) scholarship for YAC (Yeast Artificial Chromosome) technology training course at CSHL, 1995.

**ACADEMIC SERVICES AND HONORS**

**Committee Member and Honors:**

* CastUSA Single-Cell Genomics Pioneer Award (2022).
* Chairman of Board (2024-), former Chairman of Governor, and former President, Chinese Association of Science and Technology in USA (2018-2020).
* Founding Board Chairman, former President of Connecticut Chapter of Chinese Association of Science and Technology in USA (2002-2015).
* Vebleo Fellow (2021).
* Jiangxi Province Ganpo Talent in 2012 (as Senior Distinguished Prof. in Jiujiang Univ.: honorary position or called soft services).
* Advisor to Guangdong Overseas Chinese Innovation and Entrepreneurship Alliance.
* Vice President of Guangzhou Overseas Chinese Federation.
* Honorary Chairman of Biochemical Branch Committee of the Guangdong Medical Education Association.
* Vice Chairman of the Guangdong Biochemical and Molecular Biology Society, the Chinese Society of Biochemistry and Molecular Biology (CSBMB).
* Member of the 7th Board of Directors of Guangzhou Huangpu Overseas Friendship Association.
* Standing Committee Member of the Guangdong Medical Genetics Society
* Member of the Biomedical Professional Committee of the All-China Federation of Overseas Chinese (ACFROC), and Distinguished Expert of the Federation.
* Member, Basic Medical Professional Committee of CSBMB.
* Member, Tumor Markers Professional Committee of the China Anti-Cancer Association,
* Member, Academic Committee of the Key Laboratory of Precision Medicine in Sichuan Province.
* Editorial Board Member for the core textbook "Molecular and Cellular Genetics" of the 101 Basic Medicine Program of the Ministry of Education (2024).
* Chief-Consultant of the Academic Committee of the Jiangxi Provincial Key Laboratory of Systemic Biomedical Sciences (former Chief of the Academic Committee for 2 terms).
* Bing interviewed by PNAS (Proceedings of the National Academy of Sciences) Journal Club in 2013, GEN (Genetic Engineering and Biotechnology News) (USA) in 2015, and TechnologyNetworks (UK) in 2018.

**Grant and Achievement Reviewer:**

* Medical Research Council (MRC, UK),
* Foundation against Cancer Belgium (i.e. Stichting tegen Kanker / Fondation contre le Cancer)
* Numerous scientific and technological foundations in China, including National Natural Science Foundation of China (NNSF China), China MOST (Minister of Science and Technology) funds, Guangdong Provincial Department of Science and Technology, and a variety of local RD and talent funds, particularly from Guangdong, Guangzhou, Shenzhen, Guangxi, Foshan, Dongguang, Fujian, Nanjing, Shanghai, Hangzhou, and other regions, and particularly including an evaluation of the finding /project for Macao (MUST) and Hongkong professor team supported by China MOST or Shenzhen government.
* Evaluation of professorship titles and PhD degrees (committee for dissertation and degree defense) for Shanghai Jiaotong University, Qinghua University (Shenzhen Institute), Sun Yat-sen University, Jinan University, South China University of Technology, Guangzhou Medical University, Guangdong Medical University, and some other institutions and universities.

**Editor and Paper Reviewer for Academic Journals:**

* A founding Associate Editor for *Precision Clinical Medicine* (PCM, published by Oxford University Press, funded in 2016; IF=5.3 in 2023), the founding Associate Editor for *Monocytomics* (2023), and the founding Editor-in-Chief for *Single Cell Biology* (funded in 2014), and editor for *Frontiers journals*, *Life Science and Technology*, *Journal of Anatomy*, and a few other journals.
* An invited reviewer for approximately 30 academic journals internationally, including *Nature* series*, BMC* series*, BBA* series and others, such as *Nature Communication, Nature Protocols, Molecular Psychiatry, Nuclear Acids Research, Genome Biology, Genome Research, Genome Medicine, Genes, Aging Cell, Bone Research, Molecular Cancer, Scientific Data, Science Reports, BBA Reviews on Cancer, Cancer Biology & Medicine, Protein and Cell, Genomics Proteomics and Bioinformatics, BMC Genomics, BMC Biotechnology, BMC Medical Genetics, Frontiers in Cell and Developmental Biology, Frontiers in Genetics, Frontiers in Bioengineering and Biotechnology, Computational and Structural Biotechnology Journal, Cell and Development Biology, Biology of Reproduction, Molecular Ecology Resource, Journal of Clinical Genomics, Cell Biology and Medicine, Giga Science, Computational and Structural Biotechnology Journal, Cancer Communication, STAR protocols, Journal of Anatomy, Clinical and Translation Medicine, Science in China Life Sciences, Journal of Genetics and Genomics, Hereditas (Beijing), Science Bulletin, Zoological Research, Chinese Journal of Cell Biology* (in Chinese)*, Acta Academiae Medicinae Sinicae, JNCC (J National Cancer Center), Oncology Reports, Drug Discovery, Genome, Cancers*, etc.

**Organizer of Academic Conferences:**

Besides the co-organization of a series of scientific meetings, such as the 1st to 9th Chengdu Academic Forum on Precision Medicine International, the Annual Conferences of the Single Cell Science Branch of Guangdong Precision Medicine Association, and the Annual Academic Meetings of the SMU School of Basic Medical Sciences, Pan X as the major leader, organized and chaired:

* the 1st international conference on single cell and spatial omics (TICSSO) in March 2023 with more than 2,000 onsite attendees, and 530,000 online audiences (person-time); and the 2nd TICSSO, held on March 29-30, 2024, in Shenzhen with more than 2,000 onsite attendees, and 1000,000 online audiences (person-time).
* the Forum for Single Cell Elite (FOSCE), a series virtual forum for international scientists in the field of single cell and spatial omics, concentrating the young elites worldwide; by now the Session #1 to 10 completed from 2021 to 2023 has got overall approximately 50 speakers from the top scientists with new breakthrough achieved recently, and has benefit more than 50,000 audiences (person-time).
* the Global Innovation Summit Forum and the 26th Annual Meeting of the China Association of Science and Technology in the United States (2018, at Yale University, New Haven, CT). The speakers included Professor Shing-Tung Yau from Harvard University, Professor Lieping Chen from Yale University, Professor Dennis Lo from CUHK School of Medicine, and more than 10 members of NAS USA, with hundreds of scientists from US national wide and overseas joined.
* Giving keynote speak or session speak for more than 50 times in the past 10 years.

**RESEARCH FIELDS AND ACHIEVEMENTS:**

**Technology Innovations: Single cell technology for multi-omics**

Pan’s lab co-pioneered the exploration of single cell sequencing in early 2000s, among a limited number of scientists world-wide. He has innovated a dozen of technologies for single-cell omics, including：

**Single cell genomics** (whole genome amplification and sequencing /WPA; multiplex copy- number- variation sequencing /msCNV-seq and mCNV-seq);

**Single cell epigenomics** (DNA methylation scCGI-seq; chromatin architecture; msRRBS)；

**Single cell transcriptomics** (2 methods for full length scRNA-seq: PMA; SMA)；

**Single cell telomere length measurement** (SCT-pqPCR; USC-STELA);

**Single cell multiomics** (co-sequencing DNA and RNA in single cells), the 1st method for single cell multiomics;

**Single cell co-measurement of RNA and telomere length;**

**Single cell Dual-Multiplexing sequencing** (NAMUL-seq) for high-efficient single cell sequencing and in-parallel comparison of a panel of complex samples.

**Scientific Research: Omics dissection of human health and disorders**

Pan’s laboratory has conducted research on a variant of human systems and diseases, combining experimental, next generation sequencing, and computational (bioinformatics) methods to study single cell atlas of health and genetic disorders (Cohen disease, Thalassemia), variants of cancers (colorectal cancer, lung cancer, hepatocarcinoma, osteosarcoma, thyroid carcinoma, esophageal cancer) and leukemias (acute myeloid leukemia /AML, myelodysplastic syndrome /MDS, acute lymphocytic leukemia /ALL), stem cells (hematopoietic stem cells/HSCs, mesenchymal stem cells/MSCs, induced pluripotent stem cella /iPSCs, hair follicle stem cells, leukemia stem cells/LSCs, cancer stem cells/CSCs), organoid (T21 cerebral organoids, ovary organoids), development and aging, degeneration and regeneration (vascular degeneration and regeneration in stroke, functional reconstruction of ovary with organoid), immune profile (in defense malaria, and in variants cancers -microenvironment) and neuron cells, and the exploration for application of single cell technology in cancer liquid biopsy (esp. circulating cancer cells /CTCs) and genetic test for preimplantation (PGT) and prenatal fetus (NIPD).

Leveraging single cell technologies and collaborating with other institute scientists and hospital doctors, Pan’s laboratory dissects the subpopulation and diversity of cells, their dynamic relationship; cellular microenvironments, cell-cell communication, and regulation; multiomics regulation at Central Dogma levels; stem cell heterogeneity, niche, and plasticity; intratumor heterogeneity (ITH) and evolution, and their functional mechanism. They identify the specific cell clusters and genes and signal pathways responsible for drug resistance, invasive and metastatic process, and biomarker of tumors for precision diagnosis, and monitoring and improved therapy of the diseases.

These works have been supported previously by NIH of USA, Connecticut government, US industrials, and currently by the National Natural Science Foundation of China, Guangdong Natural Science Foundation (China), and Guangahou and Shenzhen municipal government.

**Publications Summary:** According to Google Scholar (by 24-05-25), **Pan X has published ~160 articles/papers/patents,including a series of in internationally referred journals with the total impact factors (IFs) of 1018, citations of 7132, H-index 39 and i10-index 66.** Among these Pan X has led as first author or (co-) corresponding author is 88, of which 19 papers has an IF 10 or higher (in total co-authored 34 papers IF>10). The representative journals with Pan X’s leading author and co-author papers are as the follows: *Nature Communication* x3 (IF 17.7), *Nucleic Acids Research* x3 (IF 19.1), *PNAS* x7 (IF 12.8), *Cell Discovery* x1 (IF 38.1), *Adv Science* x2 (IF 17.5), *Cancer Research* x2 (IF 13.3), *Oncogene* x1 (IF 9.87), *Cell Mol Life Sci* x3 (5 year IF 10.8), *Mol Ther Nucleic Acids* x2 (IF 10.18). In addition, he has co-authored papers in *Nature* x 4 (as a member of ENCODE Consortium and PsychENCODE consortium in 3 papers, IF 64.8), *Stem Cell Reports* x3 (IF7.3), *Cell* x1 (IF 64.5), *Cell Res* x1 (IF 44), *Developmental Cell* x1 (IF 13.4), and *Mol Cancer* x1 (IF 41.4), etc. Pan X has also contributed 8 books /chapters, including as the Leading Editor for a research topic in Frontiers, which was collected as an ebook: Introduction to Single Cell Omics, published by Lausanne (Switzerland): Frontiers Media, 2019, which has been read for more than 330,000 person-times world-wide.

**SELECTED ARTICLES**

ORCID: <https://orcid.org/0000-0002-7421-8155>

Google Scholar: <https://scholar.google.com/citations?user=64M5V5wAAAAJ>

1. Yingwei Huang 1, Qiqi Wang 2, Weiwei Zhou 3, Yawei Jiang 4, Kai He 5, Wei Huang 6, Yating Feng 3, Hong Wu 4, Lijuan Liu 3, Yue Pan 4, Yihua Huang 4, Zirui Chen 4, Wei Li 4, Yaowei Huang 4, Guanchuan Lin 3, Yulong Zhang 3, Yongyan Ren 7, Kaibiao Xu 4, Yanlin Yu 8, Yuping Peng 9, **Xinghua Pan** 10#, Suyue Pan 11#, Hailiang Hu 12#, Yafang Hu 13#. Prenatal p25-activated Cdk5 induces pituitary tumorigenesis through MCM2 phosphorylation-mediated cell proliferation. ***Neoplasia***. 2024 Nov; 57:101054. doi: 10.1016/j.neo.2024.101054. PMID: 39366214 PMCID: PMC11489071.
2. Bohong Cen,1,2# Jian Zhang,1# **Xinghua Pan,3#** Zhongyuan Xu,2 Rong Li,1 Chengcong Chen,1 Baiyao Wang,1 Zhiyong Li,4 Guoqian Zhang,1 Aimin Ji,5 Yawei Yuan1. Stimuli-Responsive Peptide/siRNA Nanoparticles as a Radiation Sensitizer for Glioblastoma Treatment by Co-Inhibiting RELA/P65 and EGFR. ***International Journal of Nanomedicine***. 2024 Nov 9. 2024(19): 11517—11537. doi: 10.1021/acsnano.3c01452. PMID: 39539970 PMCID: PMC11559232
3. Jingyu Gao 1 2, Yongzhang Wu 2 3, Jieming Yu 2 4, Yinbin Qiu 2, Tiantian Yi 1 2, Chaochao Luo 2, Junxiao Zhang 5, Gary Lu 6, Xu Li 7, Fu Xiong 8, Xuedong Wu 1 2, Xinghua Pan 1 2 3 9. Impact of genomic and epigenomic alterations of multigene on a multicancer pedigree. Cancer Med. 2024 Jul;13(13):e7394. doi: 10.1002/cam4.7394. PMID: 38970307 PMCID: PMC11226725 DOI: 10.1002/cam4.7394
4. Chen F, Zhang K, Wang M, He Z, Yu B, Wang X, **Pan X**, Luo Y, Xu S, Lau JTY, Han C, Shi Y, Sun YE, Li S, Hu YP. VEGF-FGF Signaling Activates Quiescent CD63(+) Liver Stem Cells to Proliferate and Differentiate. ***Adv Sci (Weinh)***. 2024 Jun 17; e2308711. doi: 10.1002/advs.202308711. Online ahead of print. PMID: 38881531
5. Guanchuan Lin, Bin Peng, Caiming Chen, Zhanying Dong, Mengchang Xu, Jinyu Gao, Jie Yu, Bei Jia, Chen Luo, Rui Hua, Changtai Xiao, Linlin Wang, Liyao Mai, Yulong Zhang, Yuanfang Lu, Yuanqiao He, Yali Song, Sadie L Marjani, Weimin Zhang, Junxiao Zhang, Mei Zhong, Song Quan, Sherman M Weissman, Hao Zhu, **Xinghua Pan**. msCNVS: medium throughput single cell copy number variation sequencing with barcoded library construction free of preamplification toward clinical implementation. ***BioXriv***, April 02, 2024. doi: <https://doi.org/10.1101/2024.04.01.587505>
6. Longlong Wang, Yong Zhou, Heyang Cui, Xuehan Zhuang, Chen Cheng, Yongjia Weng, Huijuan Liu, Shubin Wang, **Xinghua Pan\***, Yongping Cui\* and Weimin Zhang\*. IGH repertoire analysis at scale: deciphering the complexity of B cell infiltration and migration in esophageal squamous cell carcinoma. ***Cancer Gene Therapy***. 2023 Jul 21;23(1):145. doi: 10.1186/s12935-023-02987-7. *PMID: 37985722.*
7. Fengfei Wu, Fangting Wu, Qian Zhou, Xi Liu, Jieying Fei, Da Zhang, Weidong Wang, Yi Tao, Yubing Lin, Qiaoqiao Lin, **Xinghua Pan**, Kai Sun, Fang Xie & Lan Bai. A CCL2+DPP4+ subset of mesenchymal stem cells expedites aberrant formation of creeping fat in humans. ***Nature Communications***. 2023 Sept. 20; 14: 5830. doi: 10.1038/s41467-023-41418-z. *PMID: 37730641 PMCID: PMC10511504.*
8. Liyao Mai, Zebin Wen, Yulong Zhang, Yu Gao, Guanchuan Lin, Zhiwei Lian, Xiang Yang, Jingjing Zhou, Xianwei Lin, Chaochao Luo, Wanwan Peng, Caiming Chen, Jiajia Peng, Duolian Liu, Sadie L. Marjani, Qian Tao, Yongping Cui, Junxiao Zhang, Xuedong Wu, Sherman M. Weissman, and **Xinghua Pan**\*. Shortcut barcoding and early pooling for scalable multiplex single-cell reduced-representation CpG methylation sequencing at single nucleotide resolution. ***Nucleic Acids Research***. 2023 Nov. 27;51(21):e108. DOI: 10.1093/nar/gkad892. *PMID: 37870443, PMCID: PMC10681715.*
9. Wenzhi Zhan, Wei Luo, Yulong Zhang, Keheng Xiang, Xiaomei Chen, Shuirong Shen, Chuqing Huang, Tingting Xu, Wenbin Ding, Yuehan Chen, Mingtong Li, **Xinghua Pan**\*, Kefang Lai1\*. Sputum transcriptomics reveals FCN1+ macrophage activation in asthma compared with non-asthmatic eosinophilic bronchitis. ***AAIR*** (***Allergy, Asthma and Immunology Research***). 2024 Jan;31(1):131-147. doi: 10.1038/s41417-023-00689-w. PMCID: *PMC10823142, PMID: 38262391*.
10. Xiaojun Zhang, Wanwan Peng, Jie Fan, Ruihua Luo, Shanting Liu, Wei Du, Chaochao Luo, Jiawen Zheng, **Xinghua Pan\*** and Hong Ge\*. Regulatory role of Chitinase 3-like 1 gene in papillary thyroid carcinoma proved by integration analyses of single-cell sequencing with cohort and experimental Validations. ***Cancer Cell International.*** 2023 July 21;23(1):145. DOI: 10.1186/s12935-023-02987-7. *PMID: 37480002 PMCID: PMC10362555.*
11. Wang F, Zhang Z , Zeng Z , Zhu X , Mai L , Yin Y , Zhang C , Kang W , Wu X , Jiang H , Zeng S , Xiao J , Xu S , Ding Y , **Pan X** , Liang L. CCL5 and GLUT1 define leader cells in collective invasion of colorectal cancer. Preprint from ***Research Square***, 07 Apr 2023 https://doi.org/10.21203/rs.3.rs-2766632/v1 PPR: PPR642474
12. Xue Bai, Ze-Qin Guo, Yan-Pei Zhang, Zhen-zhen Fan, Li-Juan, Li Liu, Li-Li Long, Si-Cong Ma, Jian Wang, Yuan Fang, Xin-Ran Tang, Yu-Jie Zeng, **Xinghua Pan\***, De-Hua Wu\*, Zhong-Yi Dong\*. CDK4/6 inhibition triggers ICAM1-driven immune response and 4 sensitizes LKB1 mutant lung cancer to immunotherapy. ***Nature Communication.*** 04 Mar 2023:14:1247. doi.org/10.1038/s41467-023-36892-4. *PMID: 36871040, PMCID: PMC9985635***.**
13. Li-Li Long, Si-Cong Ma, Ze-Qin Guo, Yan-Pei Zhang, Zhenzhen Fan, Li-Juan Liu, Li Liu, Duan-Duan Han, Meng-Xin Leng, Jian Wang, Xue-Jun Guo, Jia-Le Tan, Xiao-Ting Cai, Yan Lin, **Xinghua Pan**, De-Hua Wu, Xue Bai, Zhong-Yi Dong. PARP inhibition induces synthetic lethality and adaptive immunity in LKB1-mutant lung cancer. ***Cancer Res.*** 2023 Feb 15;83(4):568-581. doi: 10.1158/0008-5472.CAN-22-1740. *PMID: 36512628*.
14. Vassily Trubetskoy, Antonio F. Pardiñas, Ting Qi, ...**Xinghua Pan** (as a member and co-author of the PsychENCODE consortium), ...Stephan Ripke, James T. R. Walters, Michael C. O’Donovan & Schizophrenia Working Group of the Psychiatric Genomics Consortium. Mapping genomic loci implicates genes and synaptic biology in schizophrenia. **Nature**. 2022 April 8; 604(7906):502–508. doi: 10.1038/s41586-022-04434-5. *PMID: 35396580*.
15. Rongmei Qu, Kai He, Yuchao Yang,Tingyu Fan, Bing Sun,Asmat Ullah Khan,Wenhua Huang\*,Jun Ouyang\*, **Xinghua Pan**\* and Jingxing Dai\*. The role of serum amyloid A1 in the adipogenic differentiation of human adipose-derived stem cells basing on single-cell RNA sequencing analysis. ***Stem Cell Research & Therapy****.* 2022 May 7;13(1):187. doi: 10.1186/s13287-022-02873-5. *PMID: 35525990, PMCID: PMC9080218***.**
16. Han Zhang, Lei Wang, Yinbin Qiu, Fahui Gong, Baoting Nong and **Xinghua Pan**\*. Discovery of 194 Unreported Conopeptides and Identification of a New Protein Disulfide Isomerase in Conus caracteristicus Using Integrated Transcriptomic and Proteomic Analysis. ***Front. Mar. Sci.*** 2022 March 1;9:792908. doi.org/10.3389/fmars.2022.792908.
17. Han Zhang , Anwen Liang and **Xinghua Pan**\*. Preparation and Functional Identification of a Novel Conotoxin QcMNCL-XIII0.1 from Conus quercinus. ***Toxins******(Basel)***. 2022 Jan 26;14(2):99. doi.org/10.3390/toxins14020099. *PMID: 35202127 PMCID: PMC8877388*.
18. Han Zhang, Lei Wang, Xiang Yang, Zhiwei Lian, Yinbin Qiu, Zhanying Dong, Xuedong Wu\* and **Xinghua Pan**\*. Identification of Novel Conopeptides and Distinct Gene Superfamilies in the Marine Cone Snail Conus quercinus. ***Front. Mar. Sci.*** 2021 November 12;8:766792. doi.org/10.3389/fmars.2021.766792.
19. Rongmei Qu, Kai He, Tingyu Fan, Yuchao Yang, Liyao Mai, Zhiwei Lian, Zhitao Zhou, Yan Peng, Asmat Ullah Khan, Bing Sun, Xiaolan Huang, Jun Ouyang, **Xinghua Pan\***, Jingxing Dai\*, Wenhua Huang\*. Single-cell transcriptomic sequencing analyses of cell heterogeneity during osteogenesis of human adipose-derived mesenchymal stem cells. ***Stem Cells****.* 2021 Nov; 39(11):1478-1488. doi: 10.1002/stem.3442. *PMID: 34346140*.
20. Liyao Mai, Yinbin Qiu1, Zhiwei Lian, Caiming Chen, Linlin Wang, Yao Yin, Siqi Wang, Xiang Yang, Yazi Li, Wanwan Peng, Chaochao Luo1, **Xinghua Pan\***. MustSeq, an alternative approach for multiplexible strand-specific 3' end sequencing of mRNA transcriptome confers high efficiency and practicality. ***RNA Biol***. 2021 Oct 15;18(sup1):232-243. doi: 10.1080/15476286.2021.1974208. *PMID: 34586036, PMCID: PMC8682976.*
21. Kai He\*, Xing Chen, Yin-Bin Qiu, Zhu Liu, Wen-Zhi Wang, Neal Woodman, Jesús E.‬ Maldonado, **Xinghua Pan**\*. Mitogenome and comprehensive phylogenetic analyses support rapid diversifications among species groups of small-eared shrews, genus Cryptotis (Mammalia: Eulipotyphla: Soricidae). ***Zoological Research****.* 2021 Nov 18;42(6):739-745. doi: 10.24272/j.issn.2095-8137.2021.199. PMID: 34636193, PMCID: PMC8645885.
22. Yanfang Lu, Miao Liu, Jennifer Yang, Sherman Weissman, **Xinghua Pan\***, Samuel Katz\*, Siyuan Wang\*. Spatial transcriptome profiling by MERFISH reveals fetal liver hematopoietic stem cell niche architecture. ***Cell Discovery****.* 2021 Jun 29;7(1):47.DOI : 10.1038/s41421-021-00266-1 (CELLDISC-01384) . *PMID: 34183665 PMCID: PMC8238952***.**
23. Chaochao Luo, Wanwan Peng, Jia Kang, Caiming Chen, Jiajia Peng, Yue Wang, Qian Tang, Hailong Xie, Yazi Li, **Xinghua Pan\***. Glutamine Regulates Cell Growth and Casein Synthesis through the CYTHs/ARFGAP1-Arf1-mTORC1 Pathway in Bovine Mammary Epithelial Cells. ***J* *Agric Food Chem.*** 2021 Jun 23;69(24):6810-6819. doi: 10.1021/acs.jafc.1c02223. *PMID: 34096300*.(**as the cover story**)
24. Wang H, Gong G, Chen T, Gao S, Wu Z, Wang X, Li J, Marjani SL, Costa J, Weissman SM\*, Qi F\*, **Pan X\***, and Liu L\*. Colorectal cancer stem cell states uncovered by simultaneous single-cell analysis of transcriptome and telomeres. ***Adv Sci (Weinh)****.* 2021 Feb 8;8(8):2004320. DOI: 10.1002/advs.202004320. *PMID: 33898197 PMCID: PMC8061397.*
25. Zhou Y, Yang D, Yang D, Lv X, Huang W, Zhou Z, Wang Y, Zhang Z, Wang Y, Zhang Z, Yuan T, Ding X, Tang L, Zhang J, Yin J, Huang Y, Yu W, Wang Y, Zhou C, Su Y, He A, Sun Y, Shen Z, Qian B, Meng W, Fei J, Yao Y\*, **Pan X\***, Chen P\*, and Hu H\*. Single-cell RNA landscape of intratumoral heterogeneity and immunosuppressive microenvironment in advanced osteosarcoma. ***Nature Communication****.* 2020 Dec 10;11(1):6322. doi: 10.1038/s41467-020-20059-6. *PMID: 33303760*.
26. Ma X, Guo J, Liu K, Chen L, Liu D, Dong S, Xia J, Long Q, Yue Y, Zhao P, Hu F, Xiao Z, **Pan X**, Xiao K, Cheng Z, Ke Z\*, Chen ZS\*, Zou C\*. Identification of a distinct luminal subgroup diagnosing and stratifying early stage prostate cancer by tissue-based single-cell RNA sequencing. ***Molecular Cancer****.* 2020 Oct 8;19(1):147. doi: 10.1186/s12943-020-01264-9. *PMID: 33032611; PMCID: PMC7545561*.
27. The ENCODE Project Consortium (**Pan X** as a co-author and a member of the Consortium team), Jill E Moore, Michael J Purcaro, Henry E Pratt, et al. Expanded Encyclopedias of DNA Elements in the Human and Mouse Genomes. ***Nature****.* July 29, 2020; 583: 699–710. DOI: 10.1038/s41586-020-2493-4 (2021 IF 69.504). *PMID: 32728249*.
28. The ENCODE Project Consortium (**Pan X** as a co-author and a member of the Consortium team), Michael P Snyder, Thomas R Gingeras, et al. Perspectives on ENCODE. ***Nature***.2020 Jul 29;583(7818):693-698. doi: 10.1038/s41586-020-2449-8. *PMID: 32728248.*
29. Situ B, Ye X, Zhao Q, Mai L, Huang Y, Wang S, Chen J, Li B, He B, Zhang Y, Zou J, Tang BJ, **Pan X** and Zheng L\*. Identification and Single-Cell Analysis of Viable Circulating Tumor Cells by a Mitochondrion-Specifc AIE Bioprobe. ***Advanced Science****.* 2020 Feb; 7(4): 1902760. DOI: 10.1002/advs.201902760. *PMID: 32099764*.
30. Huang P, Zhao Y, Zhong J, Zhang X, Liu Q, Qiu X, Chen S, Yang H, Hillyer Cg, Mohandas Ng, **Pan X**\*, Xu X\*. Putative Regulators for the Continuum of Erythroid Differentiation Revealed by Single-cell Transcriptomes of Human Bone Marrow and Umbilical Cord Blood. ***Proc Natl Acad Sci U S A***. May26,2020;117 (23) 12868-12876. doi.org/10.1073/pnas.1915085117. *PMID: 32457162 PMCID: PMC7293633*.
31. Wang F, Robinson L, Kramer Y, Kalmbach K, Navarro PA, Pimentel R, **Pan X\*,** Weissman S, Liu L, Keefe D\*. Measurement of Short Telomere Load in Individual Cells. ***International Journal of Genetics and Genomics*.** 2019. 7(3): 60-68. Doi: 10.11648/j.ijgg.20190703.14.
32. Gong P, Wang H, Zhang J, Fu Y, Zhu Z, Wang J, Yin Y, Wang H, Zhou Z, Yang J, Liu L, Gou M, Zeng M, Yuan J, Wang F, **Pan X**, Xiang R, Weissman SM, Qi F, Liu L. Telomere Maintenance-Associated PML Is a Potential Specific Therapeutic Target of Human Colorectal Cancer. ***Transl Oncol***. 2019 Sep; 12(9): 1164–1176. doi.org/10.1016/j.tranon.2019.05.010. *PMCID: PMC6580093. PMID: 31207547.*
33. Cen B, Wei Y, Huang W, Teng M, He S, Li J, Wang W, He G, Bai X, Liu X, Yuan Y\*, **Pan X\***, Ji A\*. An Efficient Bivalent Cyclic RGD-PIK3CB siRNA Conjugate for Specific Targeted Therapy against Glioblastoma In Vitro and In Vivo. ***Mol Ther Nucleic Acids***. 2018 Sep 6;13:220-232. doi: 10.1016/j.omtn.2018.09.002. *PMID: 30312846*.
34. Cen B, Liao W, Wang Z, Gao L, Wei Y, Huang W, He S, Wang W, Liu X\*, **Pan X\***, Ji A\*. Gelofusine Attenuates Tubulointerstitial Injury Induced by cRGD-Conjugated siRNA by Regulating the TLR3 Signaling Pathway. ***Mol Ther Nucleic Acids***. 2018 Jun 1;11:300-311. doi: 10.1016/j.omtn.2018.03.006. *PMID: 29858065.*
35. Liu YY, Shi Y, Liu Y, **Pan XH**, Zhang KX. Telomere shortening activates TGF-β/Smads signaling in lungs and enhances both lipopolysaccharide and bleomycin-induced pulmonary fibrosis. ***Acta Pharmacologica Sinica***. 2018. 39: 1735–1745. doi:10.1038/s41401-018-0007-9*. PMID: 29925920*.
36. Han L, Wu HJ, Zhu H, Kim KY, Marjani SL, Riester M, Euskirchen G, Zi X, Yang J, Han J, Snyder M, Park IH, Irizarry R, Weissman SM, Michor F\*, Fan R\*, **Pan X**\*. Bisulfite-independent analysis of CpG island methylation enables genome-scale stratification of single cells. ***Nucleic Acids Res*.** 2017 Jun 2;45(10):e77. doi: 10.1093/nar/gkx026. *PMID: 28126923*.
37. Yang J, Tanaka J, Seay M, Li Z, Jin J, Garmire LX, Zhu X, Taylor A, Li W, Euskirchen G, Halene S, Kluger Y, Snyder MP, Park I-H, **Pan X\*,** Weissman SM\*. Single Cell Transcriptomics Reveals Unanticipated Features of Early Hematopoietic Precursors. ***Nucleic Acids Res.*** 2017 Feb 17；45(3):1281-1296. doi: 10.1093/nar/gkw1214. *PMID: 28003475.*
38. Wu H, Zhang X,Hu Z, Hou Q, Zhang H, Li Y, Li S, Yue J, Jiang Z, Weissman SW, **Pan X**\*, Ju BG\*, Wu S\*. Evolution and heterogeneity of non-hereditary colorectal cancer revealed by single-cell exome sequencing. ***Oncogene***. 2017 May18;36: 2857-2867. doi: 10.1038/onc.2016.438. *PMID: 27941887*.
39. Cheng J, Roden C, Pan W, Zhu S, Baccei A, **Pan X**, Jiang T, Kluger Y, Weissman S, Guo S, Flavell R, Ding Y, Lu J. A Molecular Chipper Technology for CRISPR sgRNA Library Generation and Functional Mapping of Noncoding Regions. ***Nature Communication***. 2016 Mar 30; 7:11178. *PMID: 27025950.*
40. Keefe DL, Wang F, Robinson LG, **Pan X**, Weissman SM, Liu L & Kalmbach KH. Measurement of telomere length at the single cell level. ***Protocol Exchange***. 2017 Jan 5. doi:10.1038/protex.2016.075.
41. Hysolli E, Tanaka Y, Su J, Kim KY, Zhong T, Janknecht R, Zhou XL, Geng L, Qiu C, **Pan X**, Jung YW, Cheng J, Lu J, Zhong M, Weissman SM, Park IH. Regulation of the DNA Methylation Landscape in Human Somatic Cell Reprogramming by the miR-29 Family. ***Stem Cell Reports*.** 2016 Jul 12;7(1): 43–54. doi: 10.1016/j.stemcr.2016.05.014. PMCID: PMC4945581, *PMID: 27373925.*
42. Jiang Z, Zhang H, Wang Y, Yu B, Wang C, Liu C, Lu J, Chen F, Wang M, Yu X, Lin J, **Pan X,** Wang P, Zhu H. Altered Hepa1-6 cells by dimethyl sulfoxide (DMSO)-treatment induce anti-tumor immunity in vivo*.* ***Oncotarget*.** 2016 Feb 23; 7(8): 9340–9352. DOI: 10.18632/oncotarget.7009. *PMID: 26824185, PMC4891044.*
43. Han L, Zi X, Garmire LX, Wu Y, Weissman SM, **Pan X\*,** Fan R\*. Co-detection and sequencing of genes and transcripts from the same single cells enabled by a microfluidics platform. ***Scientific Reports****,* 2014 Sep 26;4:6485. doi: 10.1038/srep06485. *PMID: 25255798*.
44. Gagliani N, Vesely MC, Iseppon A, Brockmann L, Xu H, Palm NW, de Zoete MR, Licona-Limón P, Paiva RS, Ching T, Weaver C, Zi X, **Pan X**, Fan R, Garmire LX, Cotton MJ, Drier Y, Bernstein B, Geginat J, Stockinger B, Esplugues E, Huber S, Flavell RA. Th17 cells transdifferentiation into regulatory T cells during resolution of inflammation. ***Nature***. 2015 Jul 9;523(7559):221-5. *PMID: 25924064.*
45. Tanaka Y, Hysolli E, Su J, Xiang Y, Kim KY, Zhong M, Li Y, Heydari K, Euskirchen G, Snyder MP, **Pan X**, Weissman SM, Park IH. (2015). Transcriptome Signature and Regulation in Human Somatic Cell Reprogramming. ***Stem Cell Reports***. 2015 Jun 9;4(6):1125-39. DOI: 10.1016/j.stemcr.2015.04.009. *PMID: 26004630*.
46. Kim KY, Hysolli E, Tanaka Y, Wang B, Jung YW, **Pan X,** Weissman SM, and Park IH. X chromosome of female cells shows dynamic changes in status during human somatic cell reprogramming. ***Stem Cell Reports****.* 2014 May 15;2(6):896-909. doi: 10.1016/j.stemcr.2014.04.003. *PMID: 24936474, PMCID: PMC4050354*
47. Guo S, Zi X, Schultz V, Cheng J, Zhong M, Koochaki S, Megyola CM, **Pan X,** Heydari K, Weissman SM, Gallagher PG, Krause DS, Fan R, Lu J. Non-stochastic reprogramming from a privileged somatic cell state. ***Cell****.* 2014.156(4):649-62. *PMID: 24486105.*
48. Zuo L, Wang K, Wang G, **Pan X,** Zhang X, Zhang H, Luo X (2014). Common PTP4A1-PHF3-EYS variants are specific for alcohol dependence. ***Am J Addict***. 2014. 23(4):411-4. doi: 10.1111/j.1521-0391.2013.12115.x. *PMID: 24961364*.
49. Zuo L, Lu L, Tan Y, **Pan X,** Cai Y, Wang X, Hong J, Zhong C, Wang F, Zhang XY, Vanderlinden LA, Tabakoff B, Luo X. Genome‐Wide Association Discoveries of Alcohol Dependence. ***American Journal on Addictions***. 2014. 23: 526–539. *PMID: 25278008*.
50. Tanaka Y, Kim KY, Zhong M, **Pan X**, Weissman SM, and Park I-H. Transcriptome regulation in pluripotent stem cells by methyl CpG-binding protein 2 (MeCP2). ***Human Molecular Genetics****.* 2014, 23(4): 1045-55. *PMID: 24129406.*
51. Dan J, Liu Y, Liu N, Chiourea M, Okuka M, Wu T, Ye X, Mou C, Wang L, Wang L, Yin Y, Yuan J, Zuo B, Wang F, Li Z, **Pan X,** Yin Z, Chen L, Keefe DL, Gagos S, Xiao A, Liu L. Rif1 maintains telomere length homeostasis of ESCs by mediating heterochromatin silencing. ***Developmental Cell*.** 2014. 29(1):7-19. *PMID: 24735877*.
52. **Pan X\*#**, Durrett RE, Zhu H, Tanaka Y, Li Y, Zi X, Marjani SL, Euskirchen G, Ma C, Lamotte RH, Park IH, Snyder MP, Mason CE, Weissman SM. Two methods for full-length RNA sequencing for low quantities of cells and single cells. ***Proc Natl Acad Sci U S A***. 2013.110(2):594-9. *PMID: 23267071.*
53. Wang F#, **Pan X\***, Kalmbach K, Seth-Smith ML, Ye X, Antumes DM, Yin Y, Liu L\*, Keefe DL\*, Weissman SM\*. Robust measurement of telomere length in single cells. ***Proc Natl Acad Sci U S A*.** 2013. 110 (21): E1906–E1912. *PMID: 23661059***.** (a corresponding author). *Interviewed by* ***PNAS Club****: http://firstlook.pnas.org/new-ruler-for-telomere-length/, New ruler for telomere length, May 10, 2013 by Sarah CP Williams; featured in “This week in PNAS - In this Issue”: http://www.pnas.org/content/110/21/8315.full, May 21, 2013 by C.R., and featured as “Telomere length measurement in single cells” by Hannah Stower published in* ***Nature Reviews Genetics,***2013*. 14, 444, doi:10.1038/nrg3529, June 18, 2013.*
54. Zhang Y, Schulz V, Reed B, Wang Z, **Pan X**, Mariani J, Euskirchenc G, Snyder M, Vaccarino FM, Ivanova N, Weissman SM, Szekely AM. Functional genomic screen of human stem cell differentiation reveals pathways involved in neurodevelopment and neurodegeneration. ***Proc Natl Acad Sci U S A***. 2013. 110 (30):12361-6. *PMID: 23836664.*
55. Zuo L, Wang K, Zhang X-Y, **Pan X**, Wang G, Tan Y, Zhong C, Krystal JH, State M, Zhang H, Luo X. Association between common alcohol dehydrogenase gene (ADH) variants and schizophrenia and autism. ***Human Genetics****.* 2013. 132(7):735-43. *PMID: 23468174.*
56. Zuo L, Wang K, Zhang X, **Pan X**, Wang G, Krystal JH, Zhang H, Luo X. (2013) Sex chromosome-wide association analysis suggested male-specific risk genes for alcohol dependence.***Psychiatric Genetics***. 2013. 23(6):233-8. *PMID: 23907288.*
57. Wang Y, Yang F, Zhang HX, Zi XY, **Pan XH**, Chen F, Luo WD, Li JX, Zhu HY, Hu YP. Cuprous oxide nanoparticles inhibit the growth and metastasis of melanoma by targeting mitochondria. ***Cell Death and Disease****.* 2013. 4:e783; doi:10.1038/cddis.2013.314. *PMID: 23990023.*
58. Wang F, Yin Y, Ye Xiaoying, Liu K, Zhu H, Wang L, Chiourea M, Okuka M, Jia G, Dan, J, Zuo B, Li M, Zhang Q, Liu N, Chen L, **Pan X**, Gagos S, Keefee D, and Lin L. Molecular insights into the heterogeneity of telomere reprogramming in induced pluripotent stem cells (iPSCs). ***Cell Research***. 2012. 22(4):757–768. *PMID: 22184006.*
59. Qu L, Li Y, **Pan X**, Zhang P, LaMotte RH and Ma C. (2012). Transient receptor potential canonical 3 (TRPC3) is required for IgG immune complex-induced excitation of dorsal root ganglion neurons. ***The Journal of Neuroscienc****e*. 2012. 32(28):9554-62. *PMID: 22787041*.
60. Liu Z, Hu Z, **Pan X**, Li M, Togun TA, Tuck D, Pelizzola M, Huang J, Ye X, Yin Y, Liu M, Li C, Chen Z, Wang F, Zhou L, Chen L, Keefe DL, Liu L. (2011). Germline competency of parthenogenetic embryonic stem cells from immature oocytes of adult mouse ovary. ***Hum Mol Genet****.* 2011. 20(7):1339-52. *PMID:21239471.*
61. Yasukochia Y, Maruyamab O, Mahajana MC, Paddenc C, Euskirchend GM, Schulze V, Hirakawaf H, Kuharag S, **Pan XH**, Newburgerc PE, Snyder M, Weissmana SM. (2010). X chromosome-wide analyses of genomic DNA methylation states and gene expression in male and female neutrophils. ***Proc Natl Acad Sci U S A***. 2010.107(8): 3704-3709. *PMID: 20133578.*
62. **Pan X#\***, Urban AE, Dean P, Vincent S, Grubbert F, Hu Y, Snyder M, Weissman SM\*. A procedure for highly specific, hypersensitive, and unbiased whole genome amplification. ***Proc Natl Acad Sci U S A****.* 2008. 105(40):15499-504. *PMID: 18832167*. (a corresponding author)
63. Pan X, Weissman SM. An approach for global scanning of single nucleotide variations. ***Proc Natl Acad Sci U S A.*** 2002. 99(14):9346-51. *PMID: 12093903.*
64. Jin S, **Pan X**, Wang Y. Effect of nm23 on tumor proliferation, formation and metastasis of hepatocarcinoma. ***Chinese Journal of Oncology****. 2000.* 22(5): 381- 384. *PMID:11778273.*
65. Jin S, **Pan X**, Wang Y. Hu Y, Fu J. Construction of expression vector of sense and antisense nm23H1. ***Acad J Sec Mil Med Univ***. 1999. 20(6): 350-352.
66. Li X, Zhang KX, Fan YX, Chen XZ, Zuo J, **Pan XH**, Zhu DL, Geng ZC. HLA-DQ molecules associated with myasthenia gravis in Chinese patients. ***Acta Genetics Sinica*** (Yi Chuan Xue Bao in PubMed, new name: ***Journal of Genetics and Genomics***). 1999. 26(4): 295-300. *PMID: 10593018.*
67. Huang H, **X Pan**, J Zhou. BHRF1 antisense oligonucleotide inhibits anti-apoptosis of nasopharyngeal carcinoma cells. ***Int J Mol Med.***1999*.* 4(6):649-53. *PMID:10567678.*
68. Huang H, **Pan X**, Zhou S, Li Z, Yu L, Kong X, Zheng Q. Flow cytometric analysis of BHRF1 expression prohibiting apoptosis induced by radiation. ***Ann Otol Rhinol Laryngol*.** 1999. 108(5):481-4. *PMID: 10335710.*
69. Huang H, **Pan XH,** Zhou JH, Yu L, Kong XT, Zhou SM, Li ZJ, Fu Q, Sun XY. The Effect of Epstein-Barr virus gene bhrf1 expression on radioresistance of the nasopharyngeal carcinoma cells. ***ORL J Otorhinolaryngol Relat Spec.***1998*.* 60(6): 329-333. *PMID: 9742281.*
70. Huang H, Zhou JH, **Pan XH,** Yu L, Kong XT, Zhou SM, Li ZJ, Sun XY, Fu Q. Apoptosis induced by topoisomerase inhibitor camptothecin is inhibited by BHRF1. ***National Medical Journal of China***. 1998. 78:145-146.
71. Huang H, Zhou J, **Pan X**, Sheng X, Wen W, Ku X, Zhou S, Li Z, Hu J. The effect of the expression of bhrf1 gene on the cloning efficiency of nasopharyngeal carcinoma cells. ***Chinese Journal of EENT***. 1998. 3(1): 25-27.
72. Huang H, **Pan X** A study of EB virus bhrf1 gene in nasopharyngeal carcinoma tissues. *J****ournal of Otorhinolaryngology.***1997.11(4): 196-197.
73. Huang H, **Pan X,** Sun X. The effect of the expression of BHRF1 gene of EB virus on the proliferation of the cells of nasopharyngeal carcinoma, ***Chinese Journal of Otorhinolaryngology*** (in Pubmed as: Zhonghua Er Bi Yan Hou Ke Za Zhi). 1997. 32(5): 290-292. *PMID: 10743095.*
74. Huang H, Zhou J, **Pan X,** Yu L, Sun X, Kong X, Zhou Z, Li Z, Wen W. The effect of the expression of BHRF1 expression on the cell cycle redistribution of nasopharyngeal carcinoma. ***Chinese Journal of Otorhinolaryngology-Skull Base Surgery***. 1997. 3(4): 193-196.
75. Huang H, **Pan X,** Sun X. (1997) The effect of the expression of BHRF1 gene of EB virus on the proliferation of the cells of nasopharyngeal carcinoma, ***Chinese Journal of Otorhinolaryngology*** (in Pubmed as: Zhonghua Er Bi Yan Hou Ke Za Zhi). 1997. 32(5): 290-292. *PMID: 10743095.*
76. Huang H, Zhou JH, Zhou SM, Hu JH, **Pan XH**, Kong XT, Yu L, Sun XY, Wu W. Epstein-Barr virus BHRF1 prohibits the cells of nasopharyngeal carcinoma from apoptosis. ***J Laryngol Otol****.* 1997. 111(12):1147-50. *PMID: 9509103.*
77. Li X, Zhang KX, Fan YX, Chen XZ, Zuo J, **Pan XH**, Zhu DL, Geng ZC. HLA-DQ molecules associated with myasthenia gravis in Chinese patients. ***Acta Genetica Sinica*** (*Yi Chuan Xue Bao* in PubMed, new name: ***Journal of Genetics and Genomics***). 1999. 26(4):295-300. *PMID: 10593018.*
78. **Pan X**, Fu J. Molecular evolution of MHC-DQA genes: I. The maintenance of interallelic divergence and the influence of GC content on gene structure. ***Acta Genetica Sinica***(*Yi Chuan Xue Bao* in PubMed, new name: ***Journal of Genetics and Genomics***). 1997. 24(3): 195-205. *PMID: 9361451*.
79. **Pan X**, Fu J. Molecular evolution of MHC-DQA genes: II. Phylogenetic analysis based on nucleotide substitution and synonymous codon usage bias. ***Acta Genetica Sinica***(*Yi Chuan Xue Bao* in PubMed, new name: ***Journal of Genetics and Genomics***). 1997. 24(5): 394-402. *PMID: 9494291*.
80. Zhang K, Zhang X, Ju R, Lu J, **Pan X,** Zhu D, Geng Z. The association study of High Myopia with HLA-DPB1. ***Chinese Journal of Ophthalmology****.* 1997. 33(6): 453-456.
81. Liu M, Yu L, **Pan X,** Ye T, Kong X, Zhou S. Studies on mutation spectrum and protein expression of p53 gene in gastric carcinoma tissues. ***Carcinogenesis, Teratogenesis and Mutagenesis****.* 1997. 9(5): 271-274.
82. Hu Y, Lei Z, Yu H, Zhen W, Li J, Wang XM, Hu W, sun W, Hao G, **Pan X,** Wang XP, Fu J. Expression and replication of HBV genome in transgenic mouse. ***High Technology Communication.*** 1997. *8*(3/4): 125-126.
83. Zhang X, **Pan X**, Zhu D, Geng Z. The genetic susceptibility of HLA-DQB1 to systemic lupus erythematosus in southern Chinese Hans. ***Chinese Journal of Immunology****.* *1997.* 13(1):37-39, 44.
84. Yu H, Li Z, Gong Z, Sha J, Yang Y, **Pan X**, Wang X, Fu J, Hu Y. Pathologic studies on the transgenic mouse with HBV whole genome.***Acad J Sec Mil Med Univ****.* 1997. 18(3): 205-207.
85. Lei Z, Li J, Yu H, Wang XM, Sun X, **Pan X,** Hao G, Wang XP, Fu J. Hu Y. Generation of transgenic mice harboring hepatitis B virus (aya subtype). ***Acad J Sec Mil Med Univ.*** 1997.18(3): 201-204.
86. Yu H, Lei Z, Gong Z, Sha Y, Yang Y, **Pan X,** Wang XP, Fu J. Hu Y. Pathologic observation on HBV (aya) intact genome transgenic mice. ***Acad J Sec Mil Med Univ****.* 1997*.* 18(3): 205-207.
87. **Pan X**, Lu J, Inoko H, Tan CC, Geng Z, Zhang R, Tu L, Jiang J. Research on the genetic susceptibility for Myasthenia Gravis in Chinese Hans by genotyping of HLA-DQA1 with PCR-RFLP. ***Chinese Journal of Medical Genetics****.* 1995*.* 12(6): 354-357.
88. **Pan X**, Lu J, Inoko H, Zhang K, Zhu D, Tan CC, Geng Z. HLA-DQA1 genes involved in the genetic susceptibility to Systemic Lupus Erythematosus in Chinese Hans. ***Chinese Journal of Immunology****.* 1995. 11(1): 19-22.
89. **Pan X**, Lu J, Liu J, Zhang K, Zhu D, Tan CC, Geng Z. Studies on the genetic polymorphism of HLA-DQA1 locus in two groups of Chinese Hans and a comprehensive analysis of DQA1 frequencies in 15 related groups. ***Chinese Journal of Microbiology and Immunology***. 1995. 15(4): 276-280.
90. Lu J, **Pan X**, Zhu R, Zhang K, Zhu D, Geng Z. Studies on the genetic polymorphism of HLA-DQA1 locus in Jiangsu, Zhang and Shanghai Hans with PCR-SSO method. ***Chinese Journal of Immunology****.* 1994. 10(6): 367-368.
91. Lu J, **Pan X**, Zhang K, Zhu D, Geng Z, Zhu R. Preliminary observation of the association between High Myopia and HLA-DQA1 alleles. ***Chinese Journal of Medical Genetics****.* 1994. 111(5): 305-306.
92. **Pan X**, He L. Cytogenetics studies of two Calyptrate Dipteras (Sarcophagidae and Calliphoridae: Diptera), ***Journal of Fudan University (Natural Science)****.* 1991. 30(1):76-83.
93. **Pan X**. (1989) Principles for the analysis of chromosome evaluation and its mathematics model. ***Academic Journal of Aeronautical Medical Academy****.* 1989. 8(2): 21-27.
94. Jin Zhao, Xiaofang Wang, Yusheng He, Pingyi Xu, Laijun Lai, Younggie Chung, **Xinghua Pan\***. The Role of T Cells in Alzheimer's Disease Pathogenesis. ***Crit Rev Immunol.*** 2023;43(6):15-23. doi: 10.1615/CritRevImmunol.2023050145. *PMID: 37943150*. (invited review).
95. Zhang Y，Xu S,Wen Z, Gao JY, Li S, Weissman SM, **Pan X\***. Sample‑multiplexing approaches for single‑cell sequencing. ***Cellular and Molecular Life Sciences*** (2022) 79:466. doi.org/10.1007/s00018-022-04482-0. *PMID: 35927335.*
96. Chaoliang Zhong, Miao Liu, **Xinghua Pan\***, Haiying Zhu\*. Tumorigenicity risk of iPSCs in vivo: nip it in the bud. ***Precision Clinical Medicine***. 2022 Feb 3;5(1):pbac004. [doi.org/10.1093/pcmedi/pbac004](https://doi.org/10.1093/pcmedi/pbac004). *PMID: 35692443 PMCID: PMC9026204*
97. Zhang J\*, Späth SS, Marjani SL, Zhang W, **Pan X\***. Characterization of cancer genomic heterogeneity by next-generation sequencing advances precision medicine in cancer treatment. ***Precision Clinical Medicine.*** 2018 Jun;1(1):29-48. [doi.org/10.1093/pcmedi/pby007](https://doi.org/10.1093/pcmedi/pby007). *PMID: 30687561.*
98. Zhu W, Zhang XY, Marjani SL, Zhang J, Zhang W, Wu S, **Pan X**\*. Next-generation molecular diagnosis: single-cell sequencing from bench to bedside. ***Cell Mol Life Sci.*** 2017 Mar;74(5):869-880. doi: 10.1007/s00018-016-2368-x. *PMID: 27738745*. IF=5.79.
99. Li X1, Zhang M1, **Pan X**2,3,4, Xu Z1, Sun M1. (2017) "Three Hits" Hypothesis for Developmental Origins of Health and Diseases in View of Cardiovascular Abnormalities. ***Birth Defects Res***. 2017 Jun 1;109(10):744-757. doi: 10.1002/bdr2.1037. *PMID: 28509412.*
100. Zhang X, Marjani SL, Hu Z, Weissman SM, P**an X**\*, and Wu S\*. Single-Cell Sequencing for Precise Cancer Research: Progress and Prospects. ***Cancer Res.*** 2016 Mar 15;76(6):1305-12. doi: 10.1158/0008-5472.CAN-15-1907. *PMID: 26941284.*
101. Liu N, Liu L\*, Pan X\*. Single-cell analysis of the transcriptome and its application in the characterization of stem cells and early embryos. ***Cell Mol Life Sci.*** 2014 Jul;71(14):2707-15. doi: 10.1007/s00018-014-1601-8. *PMID: 24652479.*
102. Zhiyong Xu; Jiansheng Xie; Jinlai Meng; Peining Li; **Xinghua Pan**; Qinghua Zhou. Non-Invasive Prenatal Diagnosis: A Comparison of Cell Free Fetal DNA (cffDNA) Based Screening and Fetal Nucleated Red Blood Cell (fnRBC) Initiated Testing. ***N A J Med Sci.*** 2013;6(4):194-199. DOI: 10.7156/najms.2013.0604194.
103. **Pan XH**, Zhu HY, Marjani SL. Technological advances in single-cell genomic analyses. ***Hereditas*** (appeared in Pubmed as YiChuan). 2011. 33(1): 17-24. *PMID: 21377954*.
104. **Xinghua Pan**\*. Single Cell Analysis: From Technology to Biology and Medicine. ***Single Cell Biol***. 2014;3(1):106. doi: 10.4172/2168-9431.1000106. *PMID: 25177539 PMCID: PMC4147859.*
105. **Pan X**, Wu M. Techniques in the scanning and identification of YACs. ***Progress in Biotechnology***. 1998. 18(1): 2-9. *In Chinese.*
106. Yang L, **Pan X\***. Ethical conflict on human germline gene therapy. ***Chinese Journal of Medical Ethics***. 1998(4): 25-27. *In Chinese.*
107. **Pan X**, Fu J. Carcinogenesis in molecular genetics: basis and progress. ***Carcinogenesis, Teratogenesis and Mutagenesis***. 1997. 9(3): 193-199; 9(4): 260-263. *In Chinese.*
108. **Pan X**, Fu J. Oncogene and tumor suppressor gene. ***Science*** (Ke Xue). 1997. 49(4):37-41. *In Chinese.*
109. **Pan X**, Fu J. Gene targeting by embryo stem (ES) cells and transgenic technique. ***Foreign Medical Sciences: Genetics***. 1997. 20(3):113-115. *In Chinese.*
110. Lei Z, **Pan X**, Fu J. A new approach for evoking an immune response: gene immunization. ***Progress of Biochemistry and Biophysics.*** 1996. 23(4): 318-322. *In Chinese.*
111. Dai X, **Pan X\***. Molecular biological characteristics of transgenic mouse. ***Progress of Biochemistry and Biophysics.*** 1996. 23(2): 137-141. *In Chinese.*
112. Zhu H, **Pan X\***. 1996. Insertion mutation and cloning of mutated genes in transgenic mice: methods, achievements and expectations. ***Foreign Medical Sciences: Genetics***. 1996. 19(4):182-187. *In Chinese.*
113. Wang J, **Pan X\***. Molecular regulation of apoptosis. ***Foreign Medical Sciences: Genetics***. 1996. 19(3):116-121. *In Chinese.*
114. Yang L, **Pan X\***. Scientific progress and philosophical enlightenment of the studies on p53 gene. ***Medicine and Philosophy.*** 1996. 17(11):605-606. *In Chinese.*
115. **Pan X**, Fu J. Gene hunting: functional cloning, positional cloning and phenotype cloning. ***Journal of Nature*** (ZiRan ZaZhi). 1996. 18(2):80-87. *In Chinese.*
116. **Pan X**, Fu J. Phenotype cloning: strategy for isolation of complex trait related genes. ***Foreign Medical Sciences: Genetics.*** 1995. 18(6):285-292. *In Chinese.*
117. **Pan X**, Fu J. Molecular evaluation of genes: principle and methods. ***Journal of Nature*** (in Chinese: ZiRan ZaZhi). 1995. 17(4):189-193. *In Chinese.*
118. **Pan X**, Geng Z, Tan CC. Current progress in the molecular evaluation of MHC genes. ***Foreign Medical Sciences: Genetics***. 1995. 18(1):7-11. *In Chinese.*

**SELECTED BOOKS AND CHAPTERS**

1. Hongshan Zhao, Yuxia Yang, **Xinghua Pan**, Chuanzhou Li. Chapter 17, Human Genome and Chromosomes. Fundamentals of Medical Molecular Cell Genetics (edited by Qiao Jie, Gao Guoquan, and Zuo Ji). Pages 413-449. Peking University Medical Press, July 2024. ISBN: 978-7-5659-3196-3. Core textbooks of the Ministry of Education 101 Plan.
2. Xia Yi, **Xinghua Pan**. Chapter 22, Gene Expression Regulation. Fundamentals of Medical Molecular Cell Genetics (edited by Qiao Jie, Gao Guoquan, and Zuo Ji). Pages 524-546. Peking University Medical Press, July 2024. ISBN: 978-7-5659-3196-3. Core textbooks of the Ministry of Education 101 Plan.
3. **Pan X** and Li: Chapter 57, Single Cell Sequencing Technology (pages 1127-1149), as part of this work: Epigenetics (edited by Yu Wenqiang and Xu Guoliang; Pan X as an editorial board member). ISBN: 9787030737892, published by Science Press on March 1, 2023. *In Chinese.*
4. **Pan X,** Wu S, Weissman S. eds. ***Introduction to Single Cell Omics.*** Lausanne (Switzerland): Frontiers Media. ISSN 1664-8714, ISBN 978-2-88945-920-9, DOI 10.3389/978-2-88945-920-9, And: http://journal.frontiersin.org/researchtopic/4004/single-cell-genomics-technology-and-application (Invited Editor).
5. **Pan X,** Urban AE and Weissman SM. Chapter 20: Enriching DNA sequencing with nucleotide variation by thymidine glycosylase combined with suppression PCR. In: ***PCR Technology: Current Innovations*** (3rd Edition), edited by Tania Nolan and Stephen A. Bustin, CRC Press. June 17, 2013. pp. 285-297 (total 475 pages). ISBN 9781439848050.
6. **Pan X**, Weissman SM. Chapter 16: Global analysis of DNA allelic variation (GADAV) by specific enrichment of mismatches and selective amplification of heterohybrids. In: ***PCR Technology: Current Innovations*** (2nded, edited by Thomas Weissensteiner, Hugh G. Griffin and Annette Griffin). CRC Press. November 13, 2003. pp. 163-174 (total 475 pages). ISBN 9780849311840.
7. **Pan X**,Fu J. Oncogene and Tumor suppressor, collected in: ***Essence of Modern Medicine***. Published by the Medical School of Ningbo University Press. 1998, Ningbo, Zhejiang province, China. *In Chinese.*
8. **Pan X**, Yin Z: Chapter 3: Replication, Transcription, and Translation of Genetic Information; In the third edition of the book: Medical Molecular Biology, edited by Hu Weixin, and Liu Jing (Pan X. is a member of the editorial board). ISBN: 97870306666680. Science Press. Publication date: January 2021 (National Excellent Course Textbook, National Excellent Resource Shared Course Supporting Textbook). *In Chinese.*

**SELECTED INNOVATION PATENTS**

1. Weissman SM, **Pan X.** Methods for preparing cDNA from low quantities of cells., 2018-07-10, USPTO，US10017761 B2.
2. **Pan X**, Weissman SM. Methods for closed chromatin mapping and DNA methylation analysis for single cells, 2019-11-19, USPTO，US10480021 B2.
3. Keefe D, Weissman SM, Liu L, Wang F, **Pan X.** A method for a single cell analysis of telomere length., 2018-10-09, USPTO，US10093970 B2.
4. Weissman SM, Lasken R, **Pan X**. Methods for reducing the complexity of DNA sequences. US Patent 6,372,434 Methods for reducing the complexity of DNA sequence. US patent 6,346,399.
5. Weissman SM, **Pan X**. Methods for identifying genes associated with diseases or specific phenotypes. US Patent 6,924,104
6. Wang J, Zhang J, Huang Z, and **Pan X**. A method for accurately identification of molecular interactions and their polarity and directionality. China Patent authorization number # ZL201910571327.7; Authorization date: June 19, 2020.
7. Wang J, Zhang J, Huang Z, and **Pan X**. A method for screening gene keywords from PubMed literature. China Patent Authorization Number # ZL201910571336.6; Authorization date: June 16, 2020.
8. Huang Z, Zhang J, Wang J, Lin X, and **Pan X**. A method for annotating cell identity based on single-cell transcriptome clustering results. China patent authorization number # ZL201910242519.0; Authorization date: February 28, 2020.
9. **Pan X**, Mai L, Wang L, Qiu Y, Yin Y, Wang S. A new method, primer set, and reagent kit for high-throughput RNA sequencing and their application. China patent authorization # ZL2020 10248230.5; Authorization date: April 15, 2022.
10. **Pan X**, Xu S, Zhang Y, Zhang J, Lin X, Wang J. Unmarked multi sample mixed single cell sequencing technology based on sample genotype data splitting. Chinese patent application number # CN202211555116.2, application date December 6, 2022; Publication number CN116230082A, publication date June 6, 2023. China Patent Authorization Number #ZL202211555116.2, Authorization date: May 14, 2024.
11. Huang Z, Shen W, Wen Y, Zhang J, and **Pan X**. A tumor suppressor gene and its application. Invention patents. China Patent Authorization Number # ZL201911152615.5; Authorization date: January 10, 2023.
12. **Pan X**, Lin G, Caiming C, Dong Z. Method for traceable medium-throughput single-cell copy number sequencing. US Patent App. 18/228,664.
13. **Pan X**, Mai L, Chen C, Qiu Y, Lian Z. Method for multiplexable strand-specific 3'end sequencing of mRNA transcriptome primer set, kit and application thereof. US Patent App. 17/492,346.
14. Huang Z, Shen W, **Pan X,** Zhang J. A tumor cell surface marker and its application. Invention patents. China authorization announcement number: 110082529. Authorization announcement date: April 19, 2022.
15. **Pan X**, Lin G, Huang Z, Zhang J. A unique fragment sequence capture method based on single cell sequencing data. China patent application number: CN202011200039.X, application date: 20201030; Patent acceptance number # 202011200039. X; Publication Number: CN112309500A, Publication Date: 20210202.
16. **Pan X**, Mai L, Lian Z, Zhang Y, Lin X, Li S, Yang X, Peng J. A set of barcode connectors and a medium throughput multiplex single-cell representative DNA methylation library construction and sequencing method. China patent application number CN2021103368157, application date: March 25, 2021; Patent acceptance number # 202110336815.7; Publication number CN115125624A, publication date: September 30, 2022. PCT application acceptance on January 21, 2022, PCT/CN2022/073322, already applied for a US patent**.**
17. **Pan X**, Lin G, Chen C, Dong Z. A method for constructing a medium throughput single-cell copy number library and its application. China patent application number CN2021101331285, application date 2021-02-01; Patent acceptance number 202110133128.5; Publication number CN114836838A, publication date: August 2, 2022. PCT application accepted on January 21, 2022, PCT/CN2022/073321, being applied for a US patent.
18. **Pan X**, Mai L, Chen C, Qiu Y, Lian Z. A method for multiplexible strand-specific 3' end sequencing of mRNA transcriptome primer set, kit and application thereof. USPTO Application# 17492346, mailing date Oct 8th, 2021; filing date Oct 1st, 2021; Confirmation# 1752.7.
19. **Pan X**，Mai L, Lian Z. Method for medium-throughput multi-single-cell representative DNA methylation library construction and sequencing. USPTO submission: EFS ID #48631744, application #18372695, mailed date: Nov 15th, 2023; Confirmation Number: #2711. This applicant is a CIP of PCT/CN2022/073322, 01/21/2022.
20. **Pan X**，Lin X, Chen C, Dong Z. Method for Traceable medium-throughput single-cell copy number sequencing. USPTO Application#18/228.664, mailed date: Oct 2nd, 2023; filing date: 07/31/2023; Customer# 191483; Confirmation# 7930. This applicant is a CIP of PCT/CN2022/073321, 01/21/2022.

**SELECTED RESEARCH PROJECTS /FUNDS /AWARDS**

1. Guangdong Province Basic and Applied Basic Research Foundation (Nature Science Foundation): Multiomics sequencing based on DEN induced mouse liver cancer model to investigate the cellular and molecular mechanisms of malignant progression in chronic liver disease. #2024A1515012181; 2024.1-2026.12; as the PI.
2. National Nature Science Foundation of China: Study on single oncogene induced hepatocellular carcinoma for cellular heterogeneity and regulation based on integrated single cell multiomics. #32071452; 2021.1-2024.12; as the PI.
3. Shenzhen Bay Laboratory open fund: Integrated Study of Cellular and Molecular Characteristics for Refractory and Recurrent Acute B-Lymphocyte Leukemia in Children Using Single Cell Omics. #SZBL2020090501003, 2020.12-2023.11; as the PI.
4. Nature Science Foundation of Guangdong Province Joint Fund Key Project: Study on the Molecular Regulation of Thyroid Cancer Based on Single Cell Multiomics Sequencing. #2019B1515120033; 2020.1-2022.12; as the PI.
5. National Nature Science Foundation of China: On the dynamic cellular heterogeneity and clonal evolution of AML leukemia stem cells by integrated single-cell multimics. #81770173; 2018.1-2021.12; as the PI**.**
6. Nature Science Foundation of Guangdong Province Major Basic Cultivation Projects: Single-cell epigenomic dynamics and molecular regulation of hematopoietic stem cells in acute myeloid leukemia. #2018B030308004; 2018.5- 2022.4; as the PI.
7. National Science and Technology Program Key Special Project of National Ministry of Science and Technology (China MOST) "Protein Machine and Life Process Regulation": Screening of Novel Protein Machines and Markers for Hereditary Hematological Diseases (PI: Wang Fudong from Zhejiang University), # 2018YFA0507800; July 2018 to June 2023; Pan X as a Co-Investigator.
8. Guangdong Province Local Innovative Research Team project of the Pearl River Talent Plan: Innovation team of precision medicine for chronic liver disease. PI: Hou Jinlin from Nanfang Hospital. #2017BT01S131; July 2018 to June 2023; Pan X as a Co-Investigator.
9. Startup fund commissioned by Southern Medical University (from Guangdong Province High level University Construction Project, High level Talent Introduction Initiation Fund): Innovation of Core Technologies in Single Cell Research and Application in Biomedical Research. #C1033267；2016.9-2024.8; as the PI.
10. Guangdong Provincial Department of Science and Technology Funding for the construction of the Guangdong Provincial Key Laboratory of Biochips (Note: it has been re-constructed as the Guangdong Provincial Key Laboratory of Single Cell Technology and Applications): The construction of a single cell analysis technology platform and its application in basic scientific research and clinical practice. #2017B030314150; July 2017 to December 2021; as the PI.
11. Guangdong Provincial Department of Education Funding Graduate Demonstration Course: Molecular Biology Experiment. Date: September 2019- June 2023.as the PI.
12. Chins Most Program of International S&T Cooperation: Identification of specific markers and drug discovery for cancer stem cells by single cell analysis. #2014DFA30450; 2014.4-2017.4. PI: Lin Liu from NanKai University; Pan X as the Co-PI from Yale University.
13. Hangzhou Key International Collaboration Project (Hangzhou 115 Project): Single cell sequencing was used to screen tumor related genes in esophageal cancer samples. # 2014-02; 04/1/2014 – 3/31/2016. as the Co-PI (as Adjunct Scientist).
14. Guangdong Province Innovative Research Team Project of the Pearl River Talent Plan: Guangdong Province Introduction Innovation and Entrepreneurship Team (Jinan University Biomedical Transformation Team): Research and development of clinical diagnostic reagents for major diseases. #2013S028; 2013-2018; Pan X as one of 3 co-PIs.
15. Medical and Health Scientific Research Foundation by PLA Ministry of Health: Effect of Antisense mRNA Blocking the Expression of EBV Virus Genes on the Cellular Growth of Nasopharyngeal Carcinoma. #96Q060; 1996-1997; as a Co-Investigator.
16. National Natural Science Foundation of China Youth Fund: Establishment of NM23 Transgenic Mouse Model and Its Impact on Tumor Formation and Metastasis. #39500171; 1996-1998; as the PI.
17. China Postdoctoral Research Fund: Isolation, identification, and characteristic analysis of the full-length YAC clone of the candidate tumor suppressor gene RA538. 1993-1994; as the PI.
18. R01 MH100914-01A1. Genomic mosaicism in developing human brain. 01/01/14-12/31/18. This is a part of PsychEMCODE project. Pan X as Co-I.
19. NIH R01DK100858, Cytokines and lineage choice in hematopoietic precursors, 09/15/2013 –06/30/2016. Pan X as Co-I.
20. NIH 1P01GM099130-01, Genomic Scale Analysis of Reprogramming Processes in Fibroblasts, 09/15/11-08/31/16. Pan X as Co-I.
21. NIH 1R21HD066457-01, Transcriptome & Methylome Analysis of Single Cells, 07/01/2010- 1/31/13. Pan X as Co-I.
22. Connecticut Stem Cell Innovation Grant,11-SCA-15, Single Cell Molecular Signatures for Hematopoietic Differentiation of Human Embryonic Stem Cells, 11/01/11-10/31/13. Pan X as Co-I.
23. NIH 5P50HG002357-10. Analysis of Human Genome Using Integrated Technologies (of the ENCODE project). 2006-2012. Pan X as Co-I.
24. NIH 1P50 HG02357. Use of Genomic Arrays for Gene Expression Studies (of the ENCODE project). 08/15/06-07/31/12. Pan X as Co-I.
25. NIH 1RC2HG005602-01. Mapping Transcription Factors Binding Sites in the Mouse Genome (of the ENCODE project). 09/30/09-08/31/12. Pan X as Co-I.
26. NIH5P30 AR041942-14 Subproject: Genome-wide analysis of minute amounts of DNAs from melanocytic lesions (Yale Skin Diseases Research Core Center’s YSDRCC PF). 2007-2008. Pan X as the PI.
27. NIH R21 AI055713-01. Global Scanning for Resistance Mutation in H. pylori. 2003-2005. Pan X as co-PI.
28. Fellowship of PolyGenomics. Use of MutS and MutL to Scan Mutations in cDNA. 1998-1999. Pan X as the PI.

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Interviewed by scientific magazines:

<https://www.genengnews.com/insights/single-and-loving-it/?q=fluidigm>

<https://www.technologynetworks.com/genomics/articles/studying-the-genome-one-cell-at-a-time-308054>

<http://blog.pnas.org/2013/05/new-ruler-for-telomere-length/>

An the leading Editor of a research topic and its corresponding eBook

<https://www.frontiersin.org/research-topics/4004/single-cell-genomics-technology-andapplication>

Precision Clinical Medicine editorial board in OUP Oxford Press:

<https://academic.oup.com/pcm/pages/Editorial_Board>

Monicytomics editorial board:

<https://www.accscience.com/journal/MCM/about/editorial_board>

An international conference initiated and organized in 2023 TICSSO 1:

<https://www.prnewswire.com/news-releases/the-first-international-conference-on-single-cell-and-spatial-omics-is-held-in-guangzhou-china-the-golden-age-of-single-cell-analysis-301819021.html>;

<http://www.fimmu.com/info/1139/17590.htm>;

<https://www.ticsso.org.cn/>