CURRICULUM VITAE

Zhiqiang An, Ph.D.

PRESENT TITLE: Professor (tenured)
Robert A. Welch Distinguished University Chair in Chemistry
Director, Texas Therapeutics Institute
Director, CPRIT Core for Antibody Drug Discovery
Brown Foundation Institute of Molecular Medicine
McGovern Medical School
University of Texas Health Science Center at Houston

ADDRESS: 1825 Pressler St., Office 532
Houston, TX 77030

BIRTHDATE: October 21, 1963

CITIZENSHIP: USA

UNDERGRADUATE EDUCATION

B.S. Biology, 1983
Shanxi Agricultural University
Taigu, China

GRADUATE EDUCATION

M.S. Biology, 1986
China Agricultural University
Beijing, China

Ph.D. Plant Pathology, 1991
University of Kentucky
Lexington, KY

POSTGRADUATE TRAINING

Post-doctoral scholar, Microbial genetics, 1991-1992
Department of Plant Pathology
University of Kentucky
Lexington, KY
Chris L. Schardl, Mentor

Post-doctoral scholar, Microbial genetics, 1992-1993
Department of Biomolecular Chemistry
University of Wisconsin Medical School
Madison, WI
Robert L. Metzenberg, **Mentor**

Post-doctoral scholar, Microbial genetics, 1993-1996
Department of Plant Pathology
University of Wisconsin
Madison, WI
Sally A. Leong, **Mentor**

ACADEMIC APPOINTMENT

Professor, 2009-present:
Brown Foundation Institute of Molecular Medicine

Adjunct Professor, 2022-present
Department of Anesthesiology

McGovern Medical School, UTHealth Houston

ADMINISTRATIVE AND HOSPITAL APPOINTMENT

Director, 2009-present:
Texas Therapeutics Institute (TTI)
Director, CPRIT Core for Advanced Cancer Antibody Drug Modalities
Brown Foundation Institute of Molecular Medicine
McGovern Medical School
University of Texas Health Science Center at Houston
Houston, TX

OTHER PROFESSIONAL EXPERIENCE

Chief Scientific Officer, 2008-2009
Epitomics, Inc.
Burlingame, CA

Director, 2005-2008
Vaccines & Biologics Research
Merck Research Laboratories
West Point, PA

Senior Research Fellow, 2002-2005
Vaccines & Biologics Research
Merck Research Laboratories
West Point, PA

Research Fellow, 1998-2002:
Natural products drug discovery
Merck Research Laboratories
Rahway, NJ

Scientist, 1996-1998:
Millennium Pharmaceuticals Inc.
Cambridge, MA

PROFESSIONAL MEMBERSHIPS

American Chemical Society (ACS)
The American Association of Immunologists (AAI)
Society for Industrial Microbiology and Biotechnology (SIMB)
American Society for Microbiology (ASM)
The Antibody Society
The Chinese Antibody Society

American Association for the Advancement of Science (AAAS)
Mycological Society of America (MSA)

ACADEMIC ACTIVITIES

2009 Member, IBC Asia 2009 Scientific Advisory Panel
2009 Organizer, Fungal genome symposium, Shanghai, China
2010-present Editorial Board, Protein & Cell
2010-present Editorial Board, Mycology: An International Journal on Fungal Biology
1995-present Peer reviewer of journal articles for:

- ACS Appl. Mater. Interfaces
- ACS Chemical Biology
- Advanced Science
- Antibody Therapeutics
- Antimicrobial Agents and Chemotherapy
- Biochemistry
- Biomaterials
- BMC Clinical Pharmacology
- Cancer
- Cancer Immunology Immunotherapy
- Cancer Immunology Research
- Cell & Bioscience
- Clinical and Experimental Immunology
- Elsevier/Academic Press
- Engineering
- Frontiers in Immunology
- Journal of Immunological Methods
- Journal of Nature Products
- Journal of Perinatology
- Mbio
- Methods
- Molecular Cancer Therapeutics
- Molecular Neurodegeneration
- Molecular Therapy
- Nature Microbiology
- Nature Communications
- Neuroscience Letters
- Oncogene
- Oncotarget
- Pharmaceuticals
- Plos Genetics
- Plos One
- PNAS
- Protein & Cell
- Science Translational Medicine
- Scientific Reports
- Therapeutic Delivery

2011-present Peer reviewer of grant proposals for:

- Medical Research Council, UK

- Center for the Advancement of Science in Space (CASIS), the International Space Station (ISS) U.S. National Laboratory, NASA.
- California Institute for Regenerative Medicine (CIRM)
- Center for Clinical and Translational Sciences, NIH
- The Food and Drug Administration
- Hong Kong National Basic Research Program
- The John S. Dunn Foundation
- The Department of Defense (CDMRP)
- National Cancer Institute, NIH
- The National Science Foundation of China
- The Netherlands Organisation for Health Research and Development
- The Skolkovo Foundation, Russia

2011-present Peer reviewer for faculty promotion packages of:

- Academia Sinica
- Nankai University
- Ulsan National University of Science and Technology
- University of Kentucky
- UTSW
- University of Texas Health Science Center at Houston
- Yale University

2014-present Senior member, Sealy Center for Vaccine Development, University of Texas Medical Branch at Galveston

2016-2020 Scientific Advisory Board, State Key Laboratory of Conservation and Utilization of Bio-Resources In Yunnan, Yunnan University, Kunming, China

2016-2021 Scientific Advisory Board, NIH NIGMS T32 (1T32GM120011-01, PI, Dessauer) Training Interdisciplinary Pharmacology Scientist

2015-2020 Executive Advisory Committee, CPRIT (RP160015, PI, Ness) Collaborative Training of a New Cadre of Innovative Cancer Prevention Researchers

2016-present Scientific Advisory Board, Chinese Antibody Society

2016-present Adjunct Professor, Institute of Biotechnology, Texas A&M University

2017-present Member of the Scientific Advisory Board, Immune-Onc Therapeutics

2017-present Member, Steering Committee for the Data Science and Informatics Core for Cancer Research (DSICCR) (CPRIT RP170668)

2017-present Member, Steering Committee for the GSBS (MDACC-UTHealth Graduate School of Biomedical Sciences) Therapeutics and Pharmacology Program

2017-present Member, Steering Committee for the Data Science and Informatics Core for Cancer Research (DSICCR) (CPRIT RP170668)

2018-present Deputy Editor-in Chief, Antibody Therapeutics, Oxford Press

2019 Chair, faculty tenue review committee, UTHealth Institute of Molecular Medicine

2019- present GCC (Gulf Coast Consortium) IDDD (Innovative Drug Discovery and Development) STEERING COMMITTEE

2020 Member, site visit team for the NCI-NIH Laboratory Molecular Biology

2020 Expert reviewer, California Institute for Regenerative Medicine (CIRM)

2020 Expert reviewer, the Coronavirus Disease-Therapeutics-4 (COVID-T-4) peer review panel of the 2020 Peer Reviewed Medical Research Program (PRMRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP)

2021 Reviewer, Center for the Advancement of Science in Space (CASIS), the International Space Station (ISS) U.S. National Laboratory, NASA.

2021 Reviewer, FDA Office of the Chief Scientist Grants Program

2021 Reviewer, NIH Special Emphasis Panel for Drug Discovery and Mechanisms of Resistance in Eukaryotic Pathogenic Organisms
2021-present Board of Reviewing Editors, PNAS Nexus
2021-present Member of the Advisory Committee, CPRIT Biomedical Informatics, Genomics, and Translational Cancer Research Training Program (BIG-TCR)
2021-present Member of the Scientific Advisory Board, Parthenon Therapeutics

HONORS AND AWARDS

1986 Outstanding MS Thesis Award, Beijing Agricultural University
1990-1991 Dissertation Year Fellowship, University of Kentucky
1991 Research Fund Award, University of Kentucky
2006-2007 Merck Research Laboratories Leadership Development Program (18-month)
2010 Award for Excellence in Physical Sciences, Chemistry & Mathematics for "Therapeutic Monoclonal Antibodies: from Bench to Clinic, Zhiqiang An, Editor," by American Publishers Awards for Professional & Scholarly Excellence
2010 Honorary Professor, Yunnan University, China
2010-present Robert A. Welch Distinguished University Chair in Chemistry, UT Medical School
2011 Honorary Professor, Xiamen University, China
2010 The University of Texas System Star Award
2010 Texas ETF Scholar
2015 Elected Fellow, Society for Industrial Microbiology and Biotechnology (SIMB)
2018 Elected Fellow, American Academy of Microbiology
2019 Elected Fellow, American Association for the Advancement of Science (AAAS)
2020 Induction into the University of Kentucky College of Agriculture, Food and Environment's Hall of Distinguished Alumni
2021 Elected Fellow, National Academy of Inventors (NAI)

CURRENT TEACHING RESPONSIBILITIES

GS13 1111, Case Studies in Drug Development, 2010-present

Syllabus: GS13 1111 Case Studies in Drug Development
GSBS Large Classroom (BSRB S3.8371)
10:30am- 12:00noon, Mondays
Spring semester
Instructor: Zhiqiang An, Ph.D.
Office Hours: By appointment
Course description

The course covers the entire spectrum of drug discovery ranging from target identification, pharmacokinetics, pre-clinical and clinical safety, final design and objectives of each phase of the drug development process encountered in industry and regulatory agencies, and tracking of clinical outcomes in Phases III and IV as well as post launch surveillance for toxicity. This course provides the necessary training in knowledge, logic, and steps for successful approval of a drug and ethical, conflict of interest, and intellectual property issues involved throughout the process.

The course integrates a video based drug development course developed by Merck and Yale with live lectures from faculties with drug discovery experience and scientists from the biotech and pharmaceutical industry.

The course is designed to:

- Improve/Create formal education about the pharmaceutical industry
- Role of pharma in delivering innovative medical products/devices that provide value to improve human health

- Role of academic medical centers' collaboration in this process
- Educate students about how to interact with the pharmaceutical industry

Additional goals of the course include:

- Dispel myths about drug development and the pharmaceutical industry & academic interactions
- Show in a positive light the critical nature of academic-industry collaboration
- Present pharmaceutical industry as a valid career option

GSBS Foundations of Biomedical Research, Week 7: Cell Biology – From the membrane to the nucleus and back again

Lecture 5: Antibodies structure, production and use in cell biology, 2017, 2018, 2019, 2020

Graduate students and postdoctoral fellow supervision

See a list of current and past postdoctoral fellows and graduate students in the lab at the end of this document.

CURRENT GRANT SUPPORT

Co-I: Zhiqiang An, Ph.D. (Alec Zhang, PI)
CPRIT RP220032
Targeting immunosuppressive myeloid cells in tumor microenvironment
$1,000,000 (total direct costs)
3/1/2022-2/28/2025

PI: Zhiqiang An, Ph.D.
SIRONAX USA, INC
"LILRB2 and TREM2 targeting antibodies for AD therapy"
$750,000.00 (total costs)
4/1/22– 3/31/25

PI: Zhiqiang An, Ph.D.
IGM Biosciences
"Development of potent multivalent pan-influenza neutralizing antibodies"
$468,000.00 (total costs)
4/1/22– 3/31/23

PI: Zhiqiang An, Ph.D.
Merck
"Antibody response to EBV infection"
$316,460 (total direct costs)
1/1/22– 12/31/24

Co-I (Liu, PI), CPRIT RP210119, A Preclinical Development Core for Large-Molecule Therapeutics
$3,900,000 (total cost)
8/31/21 – 8/30/26

Co-I (Stephan, PI), CPRIT RP210108, The GCC Microphysiological Lead Optimization and Toxicity Screening Facility
$3,973,083 (total cost)
8/31/21 – 8/30/26

Co-PI (Davies, PI), CPRIT RP210043, Cancer Therapeutics Training Program
$3,136,872 (total costs)
5/1/21 – 4/30/26

PI: Zhiqiang An, Ph.D.
Sanofi Pasteur
"COVID19 targeting antibodies for vaccine development"
$170,000 (total direct costs)
9/1/20 – 8/31/22

Co-I (Kyoji Tsuchikama, PI), NIH/NIGMS, R35 GM138264-01, Chemical approaches for generating blood-brain barrier-permeable antibody conjugates
$1.5 million (total direct costs)
9/2020-8/2025

Co-PI (Chengcheng Zhang, PI), NIH, R01CA248736, ITIM-receptors for cancer treatment
$400,000 (annual direct costs)
09/01/2020 – 08/31/2025

Co-I: Zhiqiang An (Yi-Ping Li, PI), NIH R21 AR076699-01, Targeting human cancer cell-released heat shock protein 70 and 90 for intervention of muscle wasting
$200,000 (total costs)
09/01/2020 – 08/31/2022

PI: Zhiqiang An, CPRIT, RP190561, Advanced Cancer Antibody Drug Modalities Core Facility
$5,700,004 (total direct costs)
08/31/2019 – 08/30/2024

Co-PI (Cynthia Ju, PI), NIH, R01DK122708, Role of chitinase-3-like-1 (Chi3l1) in acetaminophen-induced liver injury
$314,532 (annual direct costs)
09/01/2019 – 08/31/2024

Co-I (Ningyan Zhang, PI)), Immune-Onc Therapeutics, Inc, 0012594
$1,183,000 (total cost)
2/28/ 2017 - 2/27/ 2024

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Co-I (Kyoji Tsuchikama, PI), DoD, BC180070, Chemically generated bispecific antibody-drug conjugates for treating triple-negative breast cancer
$750,000 (total direct costs)
5% effort
9/2019-8/2022

Co-I (PI:O'Donnell/Co-PI: Zhang), CPRIT RP190610, Development of an antibody targeting PCDH7 for lung cancer therapy
$2,000,000 (total direct costs)
5% effort
9/2019-8/2022

PI: Zhiqiang An, Ph.D.
Merck

"Evaluation of Vaccine-Induced Antibody and T-cell Responses to Human Cytomegalovirus Infection and Vaccination"
$830,850 (total direct costs)
7/1/11 – 6/30/23

PI: Zhiqiang An, DoD, BC161273P1, Development of Hemichannel-Targeting Antibody therapies for Breast Cancer Bone Metastasis
$1.8 million (total direct cost)
10/2017 – 9/2023

PAST GRANT SUPPORT

Co-I (Kyoji Tsuchikama, PI), DoD, BC170897, Dual-Loading ADCs for Combating Cancer Drug Resistance and Heterogeneity
$750,000 (total direct costs)
5% effort
4/2018-3/2022

Co-I (Kai Sun, PI), NIH/NIDDK 5R01DK109001, Dichotomous Effects of MT1-MMP on Adipose Tissue Remodeling
4/2017-3/2022

PI: Zhiqiang An, Ph.D.
CPRIT RP150551
"Therapeutic Monoclonal Antibody Lead Optimization and Development Core"
$5,280,000 (total direct cost)
6/1/2015-11/31/2021

MPI: Zhiqiang An (Gloer, contact PI), NIH 5 R01 GM121458-04, Mining the Coprophilous Mycobiome for New Cryptococcus Antiinfectives and Antifungal Synergistsg
$1, 000,000 (total direct costs)
01/01/2017 – 11/30/2021

Co-PI: Zhiqiang An (PI: Liu) NSFC 31629001 Liu
Biology and Chemistry of pneumocandin biosynthesis
$257,000
01/01/2017 – 12/31/2020

Co-P.I. Zhiqiang An, Ph.D. (Alec Zhang, PI; An, Co-PI),
CPRIT DP150056
"Humanized anti-LILRB antibodies to target human acute myeloid leukemia (AML)
$2,000,000 (total direct costs) and $919,000 (total direct costs to Co-PI An)
12/1/2014-11/30/2017

Co-P.I. Zhiqiang An, Ph.D. (Gerald Bills, PI; An, Co-PI),
Cidara Therapeutics.
"Engineering an antifungal super-producer strain"
$300,508 (total direct cost)
2016-2018

PanaMab
"Discovery and development of anti-endotrophin antibodies for cancer therapy"

$455,000 (total direct costs)
3/1/2014-12/1/1017

P.I. Zhiqiang An, Ph.D.
CPRIT RP150230
“Counteracting tumor evasion of antibody immunity by a novel therapeutic strategy”
$900,000 (total direct cost)
3/1/2015-2/28/2018

P.I.: Zhiqiang An, Ph.D.
Targeting HER3 for cancer therapy
Johnson & Johnson
$688,510 (total direct costs)
10/01/11 – 12/31/16

Co-I: Zhiqiang An, Ph.D. (McPherson, PI)
NIH 1RR024148
Center for Clinical and Translational Sciences
5% effort
7/1/12– 6/30/17

P.I.: Zhiqiang An, Ph.D.
Merck
“Antibody response to HIV and dengue vaccines in rhesus “
$395,169 (total direct costs)
7/1/12 – 6/30/16
P.I.: Zhiqiang An, Ph.D

P.I.: Zhiqiang An, Ph.D
Merck Sharp & Dohme Corp
“Clinical assay reagent antibodies”
$112,749 (total direct costs)
12/1/13 – 11/30/14

P.I.: Zhiqiang An, Ph.D.
Johnson &Johnson
“Investigation of IgG cleavage in the tumor microenvironment”
$1,216,151 (total direct costs)
12/01/10 – 12/30/14

P.I.: Zhiqiang An, Ph.D.
The University of Texas System Star Award
$370,000 (total direct costs)
4/14/11 – 4/13/14

P.I.: Zhiqiang An, Ph.D.
The Texas Emerging Technology fund
$2.000,000 (total direct costs)
10/1/10 – 9/30/15

P.I.: Zhiqiang An, Ph.D.

National Institutes of Health/SBIR phase I research grant 1R43 AI40799-01
$100,000 (total direct costs)
1996-1997

Co-I: Zhiqiang An, Ph.D. (Timberlake, PI)
National Institutes of Health/SBIR phase I research grant 1 R43 GM56051-01A1
$100,000 (total direct costs)
1998

P.I.: Zhiqiang An, Ph.D.
National Institutes of Health/SBIR phase II research grant 2 R44 AI40799-02
$750,000 (total direct costs)
1998-2000

PUBLICATIONS

A. **Refereed Original Articles**

1. Peng Zhao, Ningyan Zhang, Zhiqiang An, 2022. Engineering Antibody and Protein Therapeutics to Cross the Blood-Brain Barrier (submitted).
2. Leike Li, Yankai Wen, Daniel Wrapp, Jongmin Jeong, Peng Zhao, Wei Xiong, Constance Lynn Atkins, Zhao Shan, Deng Hui, Jason S. McLellan, Ningyan Zhang, Cynthia Ju, Zhiqiang An. A novel humanized Chi3l1 blocking antibody attenuates acetaminophen-induced liver injury in mice (submitted).
3. Mason Ruiz, Ningyan Zhang, Anil Sood, and Zhiqiang An. Antibody therapeutics for epithelial ovarian cancer (submitted).
4. Jingjing Xie, Xun Gui, Mi Deng, Heyu Chen, Yuanzhi Chen, Xiaoye Liu, Zhiqiang Ku, Lingxiao Tan, Ryan Huang, Yubo He, Cheryl Lewis, Kenian Chen, Lin Xu, Tao Huang, X. Charlene Liao, Ningyan Zhang, Zhiqiang An, Cheng Cheng Zhang. Blocking LAIR1 signaling in immune cells inhibits tumor development (submitted).
5. Wendao Liu, Xiaohua Ye, Zhiqiang An, and Zhongming Zhao. The challenges and opportunities in COVID-19 research and clinical translation (submitted).
6. Margarita Ríos, Joshua W. Morse, John Ye, Adan Rios, Cheng Cheng Zhang, Ningyan Zhang and Zhiqiang An. Antibody therapies for the treatment of acute leukemia: exploring new therapeutic targets (submitted)
7. Zhiqiang Ku, Xuping Xie, Jianqing Lin, Peng Gao, Abbas El Sahili, Hang Su, Yang Liu, Xiaohua Ye, Xin Li, Xuejun Fan, Boon Chong Goh, Wei Xiong, Hannah Boyd, Antonio E. Muruato, Hui Deng, Hongjie Xia, Zou Jing, Birte K. Kalveram, Vineet D. Menachery, Ningyan Zhang, Julien Lescar, Pei-Yong Shi, Zhiqiang An. 2022. Engineering SARS-CoV-2 cocktail antibodies into a bispecific format improves neutralizing potency and breadth. **Nature Communications** (under revision). bioRxiv doi: https://doi.org/10.1101/2022.02.01.478504
8. Xuejun Fan, Zihao Yuan, Hao-Ching Hsiao, Yueshui Zhao, Wei Xiong, Rahmawati Pare, Xin Li, Georgina Salazar, Jianmin Ding, Ahmad Almosa, Kai Sun, Songlin Zhang, Robert Jordan, Cheok Song Lee, Zhiqiang An, Ningyan Zhang. Impairment of IgG Fc Engagement of Effector Cells Contributes to an Immune Suppressive Tumor Microenvironment. **Communications Biology** (under revision).
9. Christopher J. LaFargue, Paola Amero, Kyunghee Noh, Lingegowda S. Mangala, Chunhua Lu, Yunfei Wen, Emine Bayraktar, Sunila Pradeep, Yihong Wan, Wonbeak Yoo, Santosh K Dasari, Vinod Vathipadiekal, Anca Chelariu-Raicu, Rajesha Roopaimoole, Zhiqiang Ku, Deng Hui, Wei Xiong, Hyun-Jin Choi, Rouba Ali-Fehmi, Michael J. Birrer, Wei Hu, Ningyan Zhang, Gabriel Lopez Berestein, Vittorio de Franciscis, Zhiqiang An, and Anil K. Sood. Overcoming Adaptive Resistance to Anti-VEGF Therapy by Targeting CD5L. **Nature Communications** (accepted).

10. Vikas Chonira , Young-Do Kwon , Jason Gorman , James Case , Zhiqiang Ku , Rudo Simeon , Ryan Casner , Darcy Harris , Adam Olia , Tyler Stephens , Lawrence Shapiro , Michael Bender , Hannah Boyd , I-Ting Teng , Yaroslav Tsybovsky , Florian Krammer , Ningyan Zhang , Michael Diamond , Peter Kwong , Zhiqiang An, and Zhilei Chen. 2022. Potent and broad neutralization of SARS-CoV-2 variants of concern by DARPins. **Nature Chemical Biology** (accepted).
11. Peng Zhao, Yuanzhong Xu, LuLin Jiang, Xuejun Fan, Leike Li, Xin Li, Hisashi Arase, Yingjun Zhao, Huaxi Xu, Qingchun Tong, Ningyan Zhang, Zhiqiang An. Engineering of a tetravalent TREM2 agonistic antibody with αTfR-mediated brain entry for the reduction amyloid pathology in 5XFAD mice. **Science Translational Medicine** (accepted).
12. YAXIAN MEI, Yuanzhi Chen, Jwala P Sivaccumar, Zhiqiang An, Ningshao Xia, Wenxin Luo. 2022. Research progress and applications of nanobody in human infectious diseases. **Frontiers in Pharmacology** DOI 10.3389/fphar.2022.963978
13. Peng Zhao, Yuanzhong Xu, Xuejun Fan, LuLin Jiang, Leike Li, Xin Li, Hisashi Arase, Yingjun Zhao, Huaxi Xu, Qingchun Tong, Ningyan Zhang, Zhiqiang An. 2022. Discovery and engineering of an anti-TREM2 antibody to promote amyloid phagocytosis in 5XFAD mice. **mAbs** https://doi.org/10.1080/19420862.2022.2107971.
14. Wen-Jing Ning, Xue Liu,Hong-Ye Zeng, Zhi-Qiang An, Wen-Xin Luo &Ning-Shao Xia. 2022. Recent progress in antibody-based therapeutics for triple-negative breast cancer. **EXPERT OPINION ON DRUG DELIVERY**. https://doi.org/10.1080/17425247.2022.2093853.
15. Summer Y. Y. Ha, Yasuaki Anami, Chisato M. Yamazaki, Wei Xiong, Candice M. Haase2, Scott D. Olson, Jangsoon Lee, Naoto T. Ueno, Ningyan Zhang, Zhiqiang An, and Kyoji Tsuchikama. 2022. An enzymatically cleavable tripeptide linker for maximizing the therapeutic index of antibody-drug conjugates. **Molecular Cancer Therapeutics** doi.org/10.1158/1535-7163.MCT-22-0362.
16. Peng Zhao, Xuejun Fan, LuLin Jiang, Zhiqiang Ku, Leike Li, Xiaoye Liu, Mi Deng, Hisashi Arase, Jay-Jiguang Zhu, Yingjun Zhao, Chengcheng Zhang, Huaxi Xu, Ningyan Zhang, Zhiqiang An. 2022. LILRB2-Mediated TREM2 Signaling Inhibition Suppresses Microglia Functions. **Molecular Neurodegeneration** 17:44, doi.org/10.1186/s13024-022-00550-y.
17. Yasuaki Anami, Yoshihiro Otani, Aiko Yamaguchi, Travis J Roeder, Wei Xiong, Ningyan Zhang, Zhiqiang An, Balveen Kaur, Kyoji Tsuchikama. 2022. Homogeneity of antibody-drug conjugates critically impacts therapeutic efficacy in glioblastoma multiforme. **Cell Reports** https://doi.org/10.1016/j.celrep.2022.110839.
18. Yang Liu, Jianying Liu, Bryan Johnson, Hongjie Xia, Zhiqiang Ku, Craig Schindewolf, Steven Widen, Zhiqiang An, Scott Weaver, Vineet Menachery, Xuping Xie, Pei-Yong Shi. 2022. Delta spike P681R mutation enhances SARS-CoV-2 fitness over Alpha variant. **Cell Reports** https://doi.org/10.1016/j.celrep.2022.110829.
19. William R Strohl, Zhiqiang Ku, Zhiqiang An, Stephen F. Carroll, Bruce A. Keyt, and Lila M. Strohl. 2022. Passive immunotherapy against SARS-COV-2: From plasma-based therapy to single potent antibodies in the race to stay ahead of the variants, **BioDrugs** https://doi.org/10.1007/s40259-022-00529-7.
20. Peng Zhao, Yasuaki Anami, Peng Gao, Xuejun Fan, Leike Li, Kyoji Tsuchikama, Ningyan Zhang, Zhiqiang An. 2022. Enhanced anti-angiogenetic effect of transferrin receptor-mediated delivery of VEGF-trap in a glioblastoma mouse model. **mAbs** 14:1, 2057269, DOI: 10.1080/19420862.2022.2057269
21. Xin Liu, Yixiang Xu, Wei Xiong, Yuqian Huang, Bingnan Yin, Helen YC Wang, Ningyan Zhang, Zhiqiang An, Rongfu Wang. 2022. Development of a TCR-Like Antibody and Chimeric Antigen Receptor Against NY-ESO-1/HLA-A2 for Cancer Immunotherapy. **Journal for ImmunoTherapy of Cancer** http://dx.doi.org/10.1136/jitc-2021-004035.
22. Daniel Wrapp, Xiaohua Ye, Zhiqiang Ku, Hang Su, Harrison G. Jones, Nianshuang Wang, Akaash K. Mishra, Daniel C. Freed, Fengsheng Li, Aimin Tang, Leike Li, Dabbu Kumar Jaijyan, Hua Zhu, Dai Wang, Tong-Ming Fu, Ningyan Zhang, Zhiqiang An, Jason S. McLellan. 2022. Structural basis for

HCMV Pentamer recognition by antibodies and neuropilin 2, **Science Advances** DOI: 10.1126/sciadv.abm2546.
23. Ila Mishra , Wei Xie , Juan Bournat , Yang He , Chunmei Wang , Elizabeth Silva , Hailan Liu , Zhiqiang Ku , Yinghua Chen , Bernadette Erokwu , Peilin Jia , Zhongming Zhao , Zhiqiang An , Chris Flask , Yanlin He , Yong Xu, and Atul Chopra. 2022. Identification of the Orexigenic Asprosin Receptor. **Cell Metabolism** https://doi.org/10.1016/j.cmet.2022.02.012.
24. Yasuaki Anami, Wei Xiong, Aiko Yamaguchi, Chisato Yamazaki, Ningyan Zhang, Zhiqiang An, Tsuchikama, Kyoji. 2022. Homogeneous antibody-angiopep 2 conjugates for effective brain targeting. **RSC Advances** 12: 3359 (DOI: 10.1039/d1ra08131d)
25. Xiaohua Ye, Zhiqiang Ku, Ningyan Zhang, Tong-Ming Fu, and Zhiqiang An. 2022. Recent progress in development of monoclonal antibodies against human cytomegalovirus. **Current Opinion in Virology** 52:166–173. doi.org/10.1016/j.coviro.2021.12.002.
26. Yang Liu, Jianying Liu, Kenneth S. Plante, Jessica A. Plante, Xuping Xie, Xianwen Zhang, Zhiqiang Ku, Zhiqiang An, Dionna Scharton, Craig Schindewolf, Steven G. Widen, Vineet D. Menachery, Pei-Yong Shi & Scott C. Weaver (2021). The N501Y spike substitution enhances SARS-CoV-2 infection and transmission. **Nature** https://doi.org/10.1038/s41586-021-04245-0).
27. Xiujie Sun, Bogang Wu, Huai-Chin Chiang, Hui Deng, Xiaowen Zhang, Wei Xiong, Junquan Liu, Aaron M Rozeboom, Brent T Harris, Eline Blommaert, Antonio Gomez, Roderic Espin Garcia, Yufan Zhou, Payal Mitra, Madeleine Prevost, Deyi Zhang, Debarati Banik, Claudine Isaacs, Deborah Berry, Catherine Lai, Krysta Chaldekas, Patricia S Latham, Christine A Brantner, Anastas Popratiloff, Victor X Jin, Ningyan Zhang, Yanfen Hu, Miguel Angel Pujana, Tyler J Curiel, Zhiqiang An, Rong Li. 2021. Tumour DDR1 promotes collagen fibre alignment to instigate immune exclusion. **Nature** https://doi.org/10.1038/s41586-021-04057-2.
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B. <u>Books</u>

1. **Z. An.** Therapeutic Monoclonal Antibodies: from Bench to Clinic, Editor, John Wiley and Sons, p889, Hoboken, New Jersey (October, 2009).
2. **Z. An.** 2005. Handbook of Industrial Mycology, Editor, Marcel Dekker, p763, New York, NY.

C. <u>Patents</u>

1. Nmes1 antibodies and methods of use thereof. US20210371508A1
2. Connexin (cx) 43 hemichannel-binding antibodies and uses thereof. US20210253680A1
3. TARGETING LILRB4 WITH CAR-T OR CAR-NK CELLS IN THE TREATMENT OF CANCER. US Application Publication No: US 2021-0179687 A1
4. Methods of treating an osteolytic tumor and spinal cord injury by administering connexin (Cx) 43 hemichannel-binding antibodies. United States Patent 10889637
5. LINKERS FOR ANTIBODY DRUG CONJUGATES, US20200115326A1
6. NOVEL LILRB2 ANTIBODIES AND USES THEREOF, 62/970,496, 2020, filed
7. NOVEL DDR1 ANTIBODIES AND USES THEREOF, WO 2021127185A1
8. Leptin Antibodies, US 2021-0188970 A1
9. Anti-lair1 antibodies and their uses, US20190338026A1
10. Linker for antibody drug conjugate, US20200115326A1
11. Methods of treating an osteolytic tumor and spinal cord injury by administering connexin (Cx) 43 hemichannel-binding antibodies, US 10889637 B2
12. EGFL6 SPECIFIC MONOCLONAL ANTIBODIES AND METHODS OF THEIR USE, US10875912B2
13. Anti-lilrb antibodies and their use in detecting and treating cancer, US10501538B2, US20200079851A1
14. Egfl6 specific monoclonal antibodies and methods of their use, US10875912B2
15. CMV neutralizing antigen binding proteins, US9868777B2
16. HER3 specific monoclonal antibodies for diagnostic and therapeutic use US10358501B2, US20200055954A1
17. Endotrophin Neutralization and Use Thereof 2013, US20170267749A1, Patent number, US9605057, US20200024333A1
18. Antigen-binding proteins targeting S. aureus ORF0657n, 2009, WO/2009/029132
19. Antibody antagonists of interleukin-13 receptor α1, US8207304, 2008, WO/2008/049098
20. Anti-ADDL antibodies and uses thereof, US8128930, 2012; US7731962, 2006, WO/2006/055178
21. Anti-IL-13Rα1 antibodies and their uses thereof, US Patent 8,613,925, 2013
22. Antibodies specific for DKK-1, 2008, US 7994293, 2008/0193449 A1

23. High affinity antibody antagonists of interleukin-13 receptor alpha 1, US10106617B2, US7754213B2, US8568722B2, US9371388B2

Other Professional Communications

Invited lectures

1. The Chinese Antibody Society, Boston, MA, 2022
2. The Blumberg Institute, Doylestown, PA, 2022
3. The University of Kansas Cancer Center, 2022
4. University of Houston Drug Discovery Institute, 2022
5. Merck Research Laboratories, West Point, PA, 2022
6. Mycological Society of America Annual Meeting, Gainesville, FL, 2022
7. The Bohdan R. Nechay, PhD Lectureship in Pharmacology, UTMB, Galveston, 2022
8. PEGS Boston, 2022
9. Department of Biochemistry & Molecular Biology, University of Texas Medical Branch, Galveston, 2022
10. Cambridge Healthtech Institute's 5th Annual Emerging Targets for Immunomodulatory Antibodies, Boston, 2021
11. NIH NCI Antibody Engineering Program, 2021
12. 2nd Annual GCC Innovative Drug Discovery and Development Conference, Houston, TX, 2021
13. Eureka, 2021
14. CPH Seminar in Precision Medicine, SBMI, UTHealth-Houston, 2021
15. Innovative Drug Discovery and Development, Gulf Coast Consortium, 2021
16. Sironax, 2021
17. Society of Chinese Bioscientists in America – Texas, 2021
18. UTHealth Psychiatry Grand Rounds, Houston, September 23, 2020
19. Viela Bio, Gaithersburg, Maryland, March, 2020
20. George Washington University, March, 2020
21. Gulf Coast Consortia, Houston, Texas, 2020
22. The Frontiers of Modern Immunology and Human Health, Yanqi Lake Forum, Beijing, China, 2019
23. Shanxi University, Taiyuan, China, 2019
24. The University of Chinese Academy of Sciences, Beijing, China, 2019
25. Sanofi Pasteur, Cambridge, MA, 2019
26. Cambridge Healthtech Institute's 7th Annual Antibodies Against Membrane Protein Targets, Boston, September 17-19, 2019
27. Department of Pharmaceutics, University of Houston College of Pharmacy, 2019.
28. Merck Research Labs, 2019
29. PEGSBoston, Cambridge Healthtech Institute, Boston, 2019
30. Department of Chemical and Environmental Engineering, University of California-Riverside, 2019
31. Harrington Discovery Institute, Cleveland, Ohio, 2019
32. Department of Plant Pathology, University of Kentucky, 2019
33. International Symposium on the Frontiers and Practice of Innovative Drug Discovery, Chengdu, China 2018
34. HiFiBio, Cambridge, MA, 2018
35. 5th International Conference of SCBA-Texas, Taiyuan, China, 2018
36. Department of Experimental Therapeutics Seminar Series, MDACC, 2018
37. 8th World Congress on Breast Cancer & Therapies, Melbourne, UT-Australia, 2018
38. Society of Chinese Bioscientists in America – Texas Annual meeting, 2018
39. Cancer Metabolism Seminar Series, UT-MDACC, 2018
40. Rutgers University, 2018
41. Biomedical Engineering Seminar Series at the University of Houston, 2018

42. Baylor-MDACC Joint Symposium on Cancer, 2018
43. Merck Research Laboratories, West Point, PA, 2017
44. Sanford Burnham Prebys Medical Discovery Institute, San Diego, 2017
45. Gritstone Oncology, Emeryville, CA, 2017
46. Baylor College of Medicine, Houston TX, 2017
47. Houston Methodist Research Institute, Houston TX, 2017
48. PEGS Boston 2017, Boston, MA, 2017
49. Abcam, Cambridge, MA, 2017
50. SCBA-TX seminar series, Houston, TX, 2017
51. Fannin Innovation Studio, Houston, 2017
52. The first Chinese Antibody Society (CAS) Annual Meeting, Cambridge, MA, 2017
53. Institute of Immunology, Tsinghua University, Beijing, 2017
54. NGM Biopharmaceuticals, South San Francisco, 2017
55. CPRIT Workshop, Houston, TX, 2016
56. Xiamen University, 2016
57. Therapeutic Antibody Symposium, Taipei, 2016
58. Department of Pharmacology Seminar Series, Baylor College of Medicine, Houston, TX, 2016
59. International Forum on the control of infectious diseases and Precision Medicine, Shenzhen, China, 2016
60. Chemical Biology Program Seminar Series, Vanderbilt University, Nashville, TN, 2016
61. Beijing Genomics Institute (BGI), Shenzhen, China, 2016
62. Department of Physiology, University of Texas Southwest Medical Center, Dallas, TX, 2016
63. The Antibody-based Biotherapeutics Forum, Shanghai, 2016
64. The Stowers Institute for Medical Research, Kansas City, Missouri, 2016
65. State Key Laboratory of Conservation and Utilization of Bio-Resources In Yunnan, Yunnan University, Kunming, China, 2016
66. Precision Health Working Group, Texas Medical Center, Houston, TX, 2016
67. Therapeutic Antibody Symposium, Taipei, 2015
68. Annual Meeting of Mycological Society of China, Shanghai, 2015
69. Microbial Pathogenesis and Immunology Dept at Texas A&M HSC, 2015
70. The 2nd SIBET International Symposium on Advanced Bio-Medical Diagnostics (SIS-ABMD), Suzhou, China, 2015
71. The 1st International Forum of Young Life Scientists, Beijing, China
72. Annual meeting of the Society of Microbiology and Biotechnology, Philadelphia 2015
73. Recent Advances in the Development of Combinatorial Therapies for Cancer, Houston, TX, 2015
74. Merck Research Laboratories, West Point, PA, 2015
75. Department of Antibody Engineering, Genentech, South San Francisco, 2015
76. The 15th IUBMB-24th FAOBMB-TSBMB International Conference, Taipei, Taiwan, 2014
77. Department of Biochemistry, UT Health Science Center at San Antonio, 2014
78. Department of Experimental Therapeutics, MD Anderson Cancer Center, Houston, 2014
79. Sanofi Pasteur, Cambridge, MA, 2014
80. Department of Chemical Biology, Rutgers University, 2014
81. Division of Oncology, University of Texas Health Science Center at Houston, 2014
82. Texas Cancer Vaccine Symposium, 2014
83. Merck Research Laboratories, 2014
84. Co-organizer, 23rd Annual Keck Research Conference "Therapeutic Monoclonal Antibodies – a Multi-Disciplinary Challenge", Houston TX, 2013.
85. Antibody Therapeutic Conference – Design, Characterization and Translation, Taipei, 2013
86. Texas Fresh Air – Academic Industry Roundtable, Austin , TX, 2013
87. Xiamen University, Xiamen, China, 2013
88. Keck Seminar Series, Rice University, Houston, TX, 2012.

89. Symposium organizer, New approaches to natural products-based drug discovery for cancer and other human diseases, Houston, TX, 2012
90. Antibody therapeutics workshop: discovery, development and commercialization, Taipei, 2012
91. Advances in Oncology: from clinical science to clinical practice, Houston, Texas, 2012
92. NanQiang Lecture, Xiamen University, Xiamen, China, 2012
93. Advances in Clinical Oncology, Panama City, Panama, 2012
94. The changing landscape of vaccine development; vaccines for chronic diseases, Galveston, Texas, 2012
95. 2nd Fungal genome symposium, Kunming, China, 2011
96. State Key Lab of Mycology, Beijing, China, 2011
97. Immunology Seminar Series, MD Anderson Cancer Center, Houston, 2011
98. Yunnan University, Kunming, China, 2010
99. Simcere Pharmaceutical Group, Nanjing, China, 2010
100. Eli Lilly Oncology Lecture, Indianapolis, 2010
101. Centocor, Radnor, PA, 2010
102. Co-organizer, Fungal genome symposium, Shanghai, China, 2009
103. Member, IBC Asia 2009 Scientific Advisory Panel
104. IBC China 2009 Pharmaceutical R&D Summit, Shanghai, China
105. Molecular Pharmacology of cancer lecture series, Memorial Sloan-Kettering Cancer Center, New York City, 2006, 2007, 2008
106. Impact China 2008, May 4-6, Beijing China
107. Shanghai Bioforum 2007, June 26-29, Shanghai, China
108. The 1st SAPA China Pharmaceutical & Biotechnology Conference 2007, June 24-25, Shanghai
109. Merck-Frosst, Montreal, Canada, 2006
110. Guangdong Science and Technology Forum, Guangzhou, China, 2006
111. TEDA (Tianjin Economic Development Area) Bioforum, Tianjing, China, November, 2005
112. MSA/JMS joint meeting, Hawaii, 2005
113. IUMS/ASM meeting, San Francisco, 2005
114. Rosetta, Seattle, WA, 2005
115. Memorial Sloan-Kettering Cancer Center, New York City, 2005
116. Annual Meeting of the Society for Industrial Microbiology, Minneapolis, MN, 2003Merck-Frosst, Montreal, Canada, 2003
117. Department of Microbiology and Biochemistry, Rutgers University, New Brunswick, NJ, 2003
118. International Symposium on Bioactive Fungal Metabolites - Impact and Exploitation, 2001
119. Panelist, First Career Pathway Panel Discussion "Industry vs. Academic", Memorial Sloan-K Kettering Cancer Center, New York City, 2001
120. Symposium organizer, Annual Meeting of the Society for Industrial Microbiology, San Diego, CA, 2000
121. 100th General Meeting of the American Society of Microbiology, Los Angeles, CA, 2000
122. Department of Crop Science, University of Illinois-Urbana, 1997
123. 13th Annual Cornell University Biotechnology Symposium, Ithaca, NY, 1997
124. Society for Industrial Microbiology Annual Meeting, Reno, Nevada, 1997
125. 4th annual high throughput screening for drug discovery, Arlington, VA, 1997
126. Medical mycology workshop, 19th Fungal Genetics Conference, Asilomar, CA, 1997
127. Developmental Control of Gene Expression and Protein Modulation, Stanford University, CA, 1996
128. Plant Molecular Biology Program, University of Wisconsin-Madison, 1995
129. The Genetics and Cellular Biology of Basidiomycetes III, London, 1995
130. Department of Infectious Disease and Bacteriology, Royal Postgraduate Medical School, London, 1995
131. Department of Plant Pathology, University of Wisconsin-Madison, 1995

132. Department of Plant Pathology, Auburn University, 1995

Graduate students, Postdoctoral Fellows, and Scientists trained (since joining UT in 2009)

Scientists

Min Fa, Ph.D. (2010-2013, Scientist, now at GenetiVision Corporation, Houston)
Kalpana Mujoo, Ph.D. (2012-2014, Assistant Professor, now at the Methodist Hospital Research Institute, Houston)
Yi Du, Ph.D. (2018-2019, Instructor, Now at UTHealth San Antonio)
Georgina T. Salazar, Ph.D. (2015-2021, Research Coordinator, now at Sanford Burnham) Prebys Medical Discovery Institute)
Ruby T. McFarland (2015-present, Senior Research Coordinator)
Wei Xiong, MD. Ph.D. (2013-present, Scientist)
Xuejun Fan, MD. Ph.D. (2010-present, Scientist)
Hui Deng, MS (2010-present, Research Associate)
Peng Gao (2020- 2021, Senior Scientist)
Xin Li (2021-present, Research Associate)
John Ye (2022-present, 2022, Research Technician)
Vita Liu (2022-present, Research Coordinator)
Hannah Boyd (2020-2022, Research Technician)

Postdoctoral Fellows

Xiumei Cai (2011-2012, now at Fudan University)
Byung-Kwon Choi (2010-2014, now at Baylor College of Medicine)
Yun Shi (2012-2014, Now at Third Military Medical University, China)
Huang George Zhao (2010-2014, now at Stemcentrx, Inc., South San Francisco)
Xuemei Niu (2013-2014, co-advisor with Dr. Gerald Bills, now at Yunnan University, China)
Bin Yuan (2011-2012, now at the Methodist Hospital Research Institute, Houston)
Weixu (Ella) Meng (2012-2015, now at Surrozen)
Shu (Selena) Zhang (2014-2015, now at Nanjing Medical University)
Hao Ching Hsiao (2015-2017)
Robbie D. Schultz (2015-2017)
Haotai (Martin) Chen (2015-2017)
Eric Kuhnert (2016-2017, co-advisor with Dr. Gerald Bills)
Qun Yue (2013-2017, now at Chinese Academy of Agricultural Sciences)
Li Chen (2014-2016, now at University of Pennsylvania)
Yan Li (2013-2017, now at Chinese Academy of Agricultural Sciences)
Yanhong Wang (2017-2018, now at Shanxi Medical University)
Wenxin Luo (2017-2018, now at Xiamen University)
Ahmad S. Salameh (2014-2019)
Yixiang Xu (2017-2018, now at Eureka Therapeutics)
Qihui Wang (2017-2018, now at Institute of Microbiology, Chinese Academy of Sciences)
Xun (Mark) Gui (2014-2019, now at Mabwell Biosciences)
Nan Lan (2016-2021, co-advisor with Dr. Gerald Bills)
Leike (Simon) Li (2013-2021, now at Tekada)
Wei Waker Xiong (2018-2019, now at HMRI)
Rui Liu (2019-2020, now at Sichuan University)
Zihao Yuan (2018-2020, now at Chinese Academy of Sciences)
Xiaohua Ye (2017-present)
Zhiqiang Ku ((2017-present)
Peng Zhao (2018-present)

Lingxiao Tan (2019-present)
Junquan Jake Liu ((2019-present)
Zhuan Zhang (2020-present)
Jwala P. Sivaccumar (2021-present)>

Graduate students

Pooja Dhupkar (2010-2012, rotation graduate student)
Seema Mukherjee (2010-2012, rotation graduate student)
Ashvin Jaiswal (2012, rotation graduate student)
Kshipra M. Gharpure (2012, rotation graduate student)
Norah Owiti (2013, rotation graduate student)
Qi Tang (2011-2013, visiting graduate student, now at Nanjing Medical University)
Lin Xia (2012-2013, visiting graduate student, now at Xiamen University)
Ziyi (Wendy) Huang (2014-2015, visiting graduate student, now at Suzhou University)
Jingnan An (2015-2017, visiting graduate student, now at Suzhou University)
Chenyi (Katherine) Yu (2015-2016, visiting MD student, Now at Xiangya Medical University)
Yuanzhi Chen (2016-2018, visiting Ph.D student, now at Xiamen University)
Hang Su (2018-present, visiting Ph.D student)
Josué E. Pineda (2019) GSBS rotation graduate student
Angel Garces (2019) GSBS rotation graduate student
Mason Ruiz (2020-present), UT GSBS student
Joshua W. Morse (2020-present) UT GSBS student
Gemalene M. Sunga (2021) GSBS rotation graduate student
Thao K. Nguyen (2022-present) GSBS PhD graduate student
Emily G. Bontekoe (2022) GSBS rotation graduate student

Undergraduate students

Vivian Ling (Brown University, summer, 2018)
Hannah Boyd (Rice University, 2020-2022)

High School students

Vicky Xiao (summer 2011, enrolled in MIT)
Lisa Bai (summer 2011, enrolled in Boston College)
Vicky Guo (summer 2012, enrolled in University of George)
Jonathan Chang (summer 2013, enrolled in University of Pittsburg)
Jason Wei (summer 2013)
Alexandra Wolff (summer 2017, 2018, enrolled in MIT)
Sebastien Chenin (Summer 2018)

Graduate student advisory Committee

Albert Eng Keong Teo, Ph.D. (2012-2014)
Mohit M. Hulsurkar, Ph.D. (2013-2016)
Elia Lopez (2017-2021, Ph.D.)
Tristen Tellman (2017-present, Ph.D. candidate)
Lan Thi Hanh Phi (2000-present, Ph.D candidate)
Andrea Hernandez (2022-present, Ph.D candidate)