吳漢忠博士/ Dr. Han-Chung Wu
中央研究院細胞與個體生物學研究所特聘研究員
中央研究院生醫轉譯研究中心特聘研究員
美國國家發明家學院院士

吳漢忠博士為中研院細胞與個體生物學研究所特聘研究員兼國家生技研究園區生醫轉譯研究中心主任及台灣大學醫學院教授。他致力於癌症及傳染病兩大研究領域，著重在基礎及轉譯醫學研究。吳博士的研究興趣在於尋找新的腫瘤抗原及開發新穎藥物傳輸系統應用於腫瘤的分子影像與治療。他發展出一套噬菌體顯現法(Phage display)來尋找特殊表現受體，用於產生全人抗體，並鑑定多種腫瘤標靶胜肽。近期，吳博士的實驗室也成功發展標靶核酸藥物技術，運用於疫苗研發和活體基因與細胞治療。研究至今共計發表超過 146 篇論文於知名國際期刊及申請 145 項專利(51 項專利家族)，其中 102 項已獲得專利。目前有 25 項專利家族包含了 24 項技術已成功授權給生技公司，8 項技術授權正在進行臨床試驗或已成為市場銷售的產品，另外有 8 項專利正在進行前臨床研究。研究成果不僅在基礎研究和應用科學領域具有重要價值，也為生物技術產業和藥物開發的發展做出了具體的貢獻，於 2020 年 12 月獲選為「美國國家發明家學院院士」（Fellow, National Academy of Inventors, NAI），此為學術發明家的最高榮耀。

除了研究工作，也參與多項學術服務並擔任行政主管。吳博士曾擔任細胞與個體生物學研究所副所長及代理所長，負責統整協調所內行政及學術等事務；擔任中研院智財處處長，推動院內的智慧財產之保護及科技移轉，運用智慧財產權產業化以增進社會福祉；曾任國家生技研究園區創服育成中心執行長，目前為中央研究院國家生技研究園區生醫轉譯研究中心主任，推動台灣生技產業發展。

經歷

中央研究院國家生技研究園區生醫轉譯研究中心　主任
國家生技研究園區創服育成中心　執行長
中央研究院細胞與個體生物學研究所　特聘研究員
中央研究院智財技轉處　處長
中央研究院細胞與個體生物學研究所　代理所長
中央研究院細胞與個體生物學研究所　副所長
國立臺灣大學醫學院病理學研究所　合聘教授
中央研究院細胞與個體生物學研究所 副研究員 & 研究員
國立臺灣大學醫學院　助理教授&副教授

榮譽獎項

2008 年 中央研究院年輕學者研究著作獎
2010 年 第五屆永信李天德醫藥科技獎
2011-2014, 2015-2018 年 2 次科技部傑出研究獎
2011, 2012, 2013, 2020, 2021 年 5 次獲國家新創獎
2015 年 台灣生技醫藥發展基金會 TBF 生技講座

2015 年 侯金堆傑出榮譽獎
2018, 2020 年 2 次科技部特約研究員獎
2018 年 國際傑出發明家終身成就獎
2018 年 行政院傑出科技貢獻獎
2019, 2021 年 2 次科技部傑出技術移轉貢獻獎
2019 年 科技部價創計畫，5 千萬元/年
2020 年 美國國家發明家學院院士
2021 年 臺灣奈米生醫學會傑出研究獎
2021 年 國立成功大學校友傑出成就獎
2021 年「第 31 屆王民寧獎」傑出貢獻獎
2022 年 未來科技獎
2024 年 莫德納台灣 mRNA 前瞻新創獎

專長

1. 細胞生物學　2. 腫瘤生物學　3. 分子病理學　4. 病毒學　5. 抗體及核酸藥物開發

吳漢忠博士/ Dr. Han-Chung Wu
Director of the Biomedical Translation Research Center (BioTReC), Academia Sinica,
Distinguished Research Fellow of the Institute of Cellular and Organismic Biology (ICOB), Academia Sinica
Fellow of the National Academy of Inventors (NAI), USA

Dr. Han-Chung Wu is a Distinguished Research Fellow of the Institute of Cellular and Organismic Biology, and the Director of Biomedical Translation Research Center (BioTReC), Academia Sinica, Taiwan. He is also a Professor at the College of Medicine of the National Taiwan University. Dr. Wu's research interest focuses on the identification of novel tumor antigens, development of targeting drug delivery systems for cancer therapy and molecular imaging. He has developed phage display technologies for the generation of fully human monoclonal antibodies and the identification of peptides for a variety of target molecules. Recently, he also developed targeting mRNA-LNP technologies for *in vivo* gene and cell therapies. Up to now, Dr. Wu has published over 146 original articles in world-renowned journals, and 145 Patents (including 102 granted patents and 43 filed patents; 51 Patent families). He has successfully licensed out 25 technologies from 24 patent families to biotech companies. Eight of the licensed technologies serve as the basis for products that are currently in clinical trials or already on the market. Eight of the licensed technologies are currently in preclinical studies for the development of therapeutics. Hence, his research results not only have significant value in basic research, but also practical applications with tangible contributions to the development of the biotech industry and drug development. Dr. Wu was elected as a Fellow of the National Academy of Inventors (NAI) of the United States in 2020. This is among the highest achievable honors for an academic inventor.

Aside from conducting research, Dr. Wu has also been responsible for coordinating academic activities and overseeing administration at the Institute of Cellular and Organismic Biology as the Vice Director and Acting Director. He had also served as the

Director of the Department of Intellectual Property and Technology Transfer, Academia Sinica, to promote the protection of intellectual property and the technology transfer, and use the industrialization of intellectual property rights to enhance social welfare. In 2019, Dr. Wu joined National Research Biotechnology Park (NBRP), Academia Sinica, as Chief Executive Officer of Innovation Incubation Center. He is currently serving as the Director of BioTReC, NBRP, Academia Sinica, with the mission of promoting the biotechnology industry development in Taiwan.

Professional Experience

- Director, Biomedical Translation Research Center, Academia Sinica, Taiwan
- Distinguished Research Fellow, Institute of Cellular and Organismic Biology, Academia Sinica
- Chief Executive Officer, Innovation Incubation Center/National Biotechnology Research Park
- Director, Department of Intellectual Property and Technology Transfer, Academia Sinica
- Acting Director, Institute of Cellular and Organismic Biology, Academia Sinica
- Vice Director, Institute of Cellular and Organismic Biology, Academia Sinica
- Joint Appointment Professor, Institute of Pathology; and Graduate Institute of Oral Biology, College of Medicine, National Taiwan University
- Associate & Research Fellow, Institute of Cellular and Organismic Biology, Academia Sinica
- Assistant & Associate Professor, Institute of Pathology; and Graduate Institute of Oral Biology, College of Medicine, National Taiwan University

Honors & Awards

- 2008 Academia Sinica Young Investigator Award
- 2010 Yung-Shing Young Investigator Award
- 2011-2014 NSC Outstanding Research Award, National Science Council, Taiwan
- 2011, 2012, 2013, 2020, 2021 National Innovation Award- Excelsior Award
- 2015 Chair, Taiwan Bio-development Foundation (TBF) Award
- 2015 Ho Jen-Dui Distinguished Honor Award
- 2015-2018 MOST Outstanding Research Award, Ministry of Science and Technology, Taiwan
- 2018, 2020 Special Research Fellow Award, Ministry of Science and Technology, Taiwan
- 2018 International Inventor Prize and Lifetime Achievement Academic Award
- 2018 The Executive Yuan Award for Outstanding Science and Technology Contribution
- 2019, 2021 Award for Excellent Contributions in Technology Transfer, Ministry of Science and Technology, Taiwan
- 2019 Taiwan Reputed University Startups to Taiwan Unicorns, (TRUS-U Program, 50 million NTD/year), Ministry of Science and Technology, Taiwan
- 2020 National Academy of Inventors (NAI) Fellow, USA
- 2021 Outstanding Research Award, Taiwan Nanomedicine Society
- 2021 NCKU Distinguished Alumni Award
- 2021 Award for Outstanding Contribution of Academic Research Achievements to

the Development of Pharmaceutical Technology, National Health and National Society, Ming-Ning Wang Memorial Foundation

- 2022 FutureTec Award, National Science Council, Taiwan
- 2024 Moderna Taiwan mRNA Innovation Awards

Areas of Expertise

1. Cell Biology
2. Tumor Biology
3. Molecular Pathology
4. Virology
5. Antibody and Nucleic Drug Development

CURRICULUM VITAE

Name: Han-Chung Wu (吳 漢 忠)

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Phone: +886-2-2789-9528; +886-2-7750-5858
Fax: +886-2-2788-0268
E-mail: hcw0928@as.edu.tw

Education

Ph.D. Institute of Pathology, College of Medicine, National Taiwan University

Professional Experience

Director in National Biotechnology Research Park/Biomedical Translation Research Center, BioTReC, Academia Sinica
Distinguished Research Fellow in Institute of Cellular and Organismic Biology, Academia Sinica
Director in Department of Intellectual Property and Technology Transfer, Academia Sinica
Chief Executive Officer (CEO) in National Biotechnology Research Park/BioHub Taiwan, Academia Sinica
Acting Director in Institute of Cellular and Organismic Biology, Academia Sinica
Vice Director in Institute of Cellular and Organismic Biology, Academia Sinica
Joint Appointment Professor in Institute of Pathology; and Graduate Institute of Oral Biology, College of Medicine, National Taiwan University
Associate Research Fellow & Research Fellow, Institute of Cellular and Organismic Biology, Academia Sinica
Assistant & Associate Professor, Institute of Pathology; and Graduate Institute of Oral Biology, College of Medicine, National Taiwan University

Honors & Awards

1. Editorial Board of the International Journal of Oncology
2. Editorial Board of PLoS ONE
3. Editorial Advisory Board of The Open Breast Cancer Journal
4. Editorial Board of the Clinical Cancer Drugs
5. 2008 Academia Sinica Young Investigator Award (2008年中央研究院年輕學者研究著作獎)
6. 2010 Yung-Shing Young Investigator Award (2010年第五屆永信李天德醫藥科技獎)
7. 2007, 2009, 2010, 2011, 2013, 2015, 2020, 2021, 2023 Significant Research Achievements, Academia Sinica (2007年, 2009年, 2010年, 2011年, 2013年, 2015年, 2020年, 2021年, 2023年中央研究院重要研究成果)
8. 2011 8th National Innovation Award (2011 第八屆國家新創獎)
9. 2011-2014, NSC Outstanding Research Award, National Science Council, Taiwan (2011 國科會傑出研究獎)
10. 2012 9th National Innovation Award (2012 第九屆國家新創獎)
11. 2013 10th National Innovation Award (2013 第十屆國家新創獎)

12. 2013 Taiwan Healthcare and Agricultural Biotech Industries Innovation and Excellence Awards (2013 生醫暨生農產業選秀大賽生醫組潛力新秀獎)
13. 2015 Chair, Taiwan Bio-development Foundation Award (2015 台灣生技醫藥發展基金會TBF生技講座)
14. 2015 Ho Jen-Dui Distinguished Honor Award (2015 侯金堆傑出榮譽獎)
15. 2015-2018, MOST Outstanding Research Award, Ministry of Science and Technology, Taiwan (2015 科技部傑出研究獎)
16. 2018-2020, Special Research Fellow Award, Ministry of Science and Technology, Taiwan (2018 科技部特約研究員獎)
17. 2018 International Inventor Prize and Lifetime Achievement Academic Award (2018 國際傑出發明家終身成就獎)
18. 2018 The Executive Yuan Award for Outstanding Science and Technology Contribution (2018 行政院傑出科技貢獻獎)
19. 2019 Award for Excellent Contribution in Technology Transfer, Ministry of Science and Technology, Taiwan (2019 科技部傑出技術移轉貢獻獎)
20. 2019 Taiwan Reputed University Startups to Taiwan Unicorns, (TRUS-U Program, 50 million NTD/year), Ministry of Science and Technology, Taiwan
    (科技部價創計畫，5千萬元/年)
21. 2020-2023, Special Research Fellow Award, Ministry of Science and Technology, Taiwan (2020 科技部特約研究員獎)
22. 2020 The 17th National Innovation Award- Excelsior Award (2020 第十七屆國家新創獎-新創精進獎)
23. 2020 National Academy of Inventors (NAI) Fellow (2020 美國國家發明家學院院士)
24. 2021 Outstanding Research Award, Taiwan Nanomedicine Society (2021臺灣奈米生醫學會傑出研究獎)
25. 2021 The 18th National Innovation Award- Excelsior Award (2021 第十八屆國家新創獎-新創精進獎)
26. 2021 Award for Excellent Contributions in Technology Transfer, Ministry of Science and Technology, Taiwan (2021 科技部傑出技術移轉貢獻獎)
27. 2021 NCKU Distinguished Alumni Award (2021 國立成功大學校友傑出成就獎)
28. 2021 Award for Outstanding Contribution of Academic Research Achievements to the Development of Pharmaceutical Technology, National Health and National Society, Ming-Ning Wang Memorial Foundation (「第31屆王民寧獎」學術研究成果對醫藥科技發展、國民健康和國家社會傑出貢獻獎)
29. 2022 Future Tech Award, National Science Council (2022 國科會未來科技獎)
30. 2024 Moderna Taiwan mRNA Innovation Awards (2024 年 莫德納台灣 mRNA 前瞻新創獎)

Teaching:

1. Molecular Tumor Biology (2001-present) at National Taiwan University, College of Medicine, Graduate Institute of Oral Biology for M.S. and Ph.D. students.

2. Methods in Experimental Pathology (2001-present) at National Taiwan University, College of Medicine, Institute of Pathology for M.S. and Ph.D. students.
3. Advance Tumor Biology (2005-present) at National Taiwan University, College of Medicine, Graduate Institute of Oral Biology for M.S. and Ph.D. students.
4. Advanced Animal Biology (2006-present) at Academia Sinica for TIGP Ph.D. students.
5. Stem Cell Biology (2006-present) at Academia Sinica for M.S., Ph.D. and TIGP Ph.D. students.
6. Seminar in Translational Medicine (2008-present) at Academia Sinica for TIGP Ph.D. students.
7. Molecular & Cellular Biotechnology (2011-present) at Academia Sinica for TIGP Ph.D. students.
8. Translational Medicine (2014-present) at Academia Sinica for TIGP Ph.D. students.

Research Interests

1. Molecular mechanisms of tumorigenesis.
2. Development of targeting drug delivery systems for cancer imaging and therapy.
3. Development of therapeutic antibodies and nucleic drugs for cancer therapy.
4. Pathogenesis of dengue hemorrhagic fever.
5. Development of diagnostic reagents, therapeutic antibodies and vaccines for infectious diseases.

Academic Services:

Aside from conducting research, Dr. Wu has also been responsible for coordinating academic activities and overseeing administration at the Institute of Cellular and Organismic Biology as the Vice Director and Acting Director. He had also served as the Director of the Department of Intellectual Property and Technology Transfer, Academia Sinica, to promote the protection of intellectual property and the technology transfer, and use the industrialization of intellectual property rights to enhance social welfare. In 2019, Dr. Wu joined National Research Biotechnology Park (NBRP), Academia Sinica, as Chief Executive Officer of BioHub Taiwan. He is currently serving as the Director of BioTReC, NBRP, Academia Sinica, with the mission of promoting the biotechnology industry development in Taiwan. With regard to the commitment to education, I have actively participated in teaching various courses and curriculums offered by the Academia Sinica. In addition to being the Joint Appointment professor at the National Taiwan University College of Medicine for 20 years, I have also been the chair-person for the student recruitment program at Academia Sinica. In terms of the dedications and services to the professional community, I have served as the academic committee member for Ministry of Science and Technology (計畫審查委員、行政院傑出科技貢獻獎審查委員、傑出研究獎評審委員), as well as the chair-person and committee member for evaluating projects and grant applications to Ministry of Economic Affairs (經濟部學界、業界、法人科專等主審委員及審查委員). At the same time, I have also served as a committee member for 行政院生醫科技與產品研發中心 and Industrial Technology Research Institute (ITRI) 中長期產業技術前瞻, as well as the chair-person for the MOEA SBIR programs committee (經濟部的研發中心計畫主審委員). Lastly, I have serve as a SAB committee member (諮詢委員) or appointment committee member (聘審委員) at various Universities and Research Institutes.

Regular Reviewer: serves as the reviewer for more than 41 the international journals and reviews ~10-15 manuscripts per year including journals:

ACS Nano
Acta Biomaterialia
Advances in Bioscience and Biotechnology
Applied and Environmental Microbiology
Biomaterials
BMC Cancer
Cancer Biotherapy & Radiopharmaceuticals
Cancer Letter
Cancer Research
Chemistry Today
Clinical Cancer Drugs
Clinical Cancer Research
Current Medicinal Chemistry
Drug Delivery
Epigenomics
European Journal of Pharmaceutical Sciences
FEBS Journal
International Journal of Oncology
International Journal of Pharmaceutics
Journal of Cancer Research and Clinical Oncology
Journal of Drug Delivery and Therapeutics
Journal of Gastroenterology and Hepatology
Journal of Infectious Diseases
Journal of Oncology
Journal of Translational Medicine
Nanomedicine: NBM
Nanoscale
Nature Communications
Oncology
Oncotarget
Pharmacogenomics
PLoS one
Pigment Cell and Melanoma Research
Scientific Reports
Stem Cell
The Journal of Biomedical Science
The Journal of Virological Methods
The Open Breast Cancer Journal
Tumor Biology
Therapeutic Delivery
Virus Research

Major Committee

1. Academic committee member for various grant applications to National Science and Technology Council (NSTC); Review more than 30 research proposals/year (國科會各種獎項及計劃審查委員)

Chairperson and committee member for evaluating projects grant applications to Ministry of Economic Affairs (MEA); Review more than 15 research proposals/year (經濟部科專主審委員、審查委員)

2. Academic committee member at The Executive Yuan Award for Outstanding Science and Technology Contribution (行政院傑出科技貢獻獎審查委員)
3. Expert Advisory Committee at Research Center for Epidemic Prevention Science of NSTC (國科會防疫科學研究中心專家諮詢委員)
4. Chairperson for the MOEA SBIR programs committee
5. The Committee of Appointment Review at Academia Sinica (生命科學組聘任資格審查委員會)
6. The Committee of Appointment Review at Institutes and Universities
7. The Science Advisory Board (SAB) or Appointment Review committee member at Institutes and Universities
8. Review member for NHRI Excellent Senior Research Assistant Award (國衛院院外整合性計畫優秀資深研究助理獎助審查委員)
9. Expert committee member for the biologic agent of Chinese pharmacopoeia at TFDA (衛生福利部食品藥物管理署-中華藥典生物製劑專家委員)
10. Committee member for 行政院生醫科技與產品研發中心
11. Industrial Technology Research Institute (ITRI) 中長期產業技術前瞻專家委員
12. Chairman, Taiwan Antibody Association (台灣抗體協會理事長)
13. Director, The Chinese Society of Cell and Molecular Biology (中華民國細胞及分子生物學學會理事)
14. Director, Taiwan Genomics and Genetics Society (台灣基因體暨遺傳學會理事)
15. Executive director, The Taiwan Society for Biochemistry and Molecular Biology (台灣生化及分生學會常務理事)
16. CEO, Jung-Yaw Lin Science and Education Foundation (財團法人台北市林榮耀教授學術教育基金會執行長)
17. Review member for NHRI Excellent Senior Research Assistant Award (國衛院院外整合性計畫優秀資深研究助理獎助審查委員)
18. Committee member for National Taiwan Science Education Center (國立台灣科學教育館評審委員)
19. Committee member for National Primary and High School Science Fair (全國中小學科展評審委員)
20. Steering Committee Member for Taiwan International Science Fair (TISF) (台灣國際科展指導委員)
21. The Committee Member for the Selection of the Distinguished Alumni Award at National Cheng Kung University (成功大學校友傑出成就獎委員會委員)
22. Director, Taiwan Bio Industry Organization (社團法人台灣生物產業發展協會理事)
23. Director, Taiwan Industrial Technology Association (台灣產業科技推動協會理事)
24. Development Advisory Committee at Taichung Veterans General Hospital (台中榮民總醫院院務發展諮議委員會)

Committee / Academia Sinica

1. The Management Board of Research and development achievements (研究發展成果管理委員會)
2. The Management Board of Conflict of Interest

(利益衝突管理委員會)
3. The Working Committee of Equipment of National Biotechnology Research Park (國家生技研究園區儀器設備工作小組委員會)
4. Construction Committee of National Biotechnology Research Park (國家生技研究園區興建小組委員會)
5. The Supervised Committee of Environmental Protection (國家生技研究園區環境保護監督委員會)
6. Advisory Committee of Incubation Center at Academia Sinica (中研院附設育成中心諮詢委員會)
7. The Committee of Environment, Health and Safety Management (環安衛管理委員會委員)
8. The Review Team of Specialist (院本部特殊性約聘技術人員審核小組)
9. The Review Team of Research Technician Assistant (院本部特殊技能助理甄審小組)
10. Coordinating Committee of Project and Budget (計畫與預算協調委員會委員)
11. Promotion Committee of computerized administration (行政作業電腦化推動委員會)
12. Convener of the National Biotechnology Research Park Operation Coordination Group (國家生技研究園區營運協調組召集人)
13. Convener of the National Biotechnology Research Park Academy (國家生技研究園區學苑召集人)
14. Convener of the National Biotechnology Research Park DEMO Day (國家生技研究園區 DEMO Day 召集人)
15. Convener of the National Biotechnology Research Park PITCH Day (國家生技研究園區 PITCH Day 召集人)

Review for international academic institutes or government agencies
National Medical Research Council, UK
Interregional Project Networks (IPN), The Austrian Science Fund
Raine Medical Research Foundation, Australia
Ariel University, Israel, Evaluation of *promotion to the full Professor*
Duke-NUS Medical School Singapore (Duke-NUS), Evaluation of promotion to the Associate Professor

Publication Summary:

146 Peer-reviewed published papers; 145 Patents (51 Patent families) including 102 granted patents and 43 filed patents); Licensed out 25 technology transfers from 24 Patent families; 12 Invited review articles or books; 255 plenary, keynote, chair lecture, Invited or Conference contributions.

Selected Publications (2011 ~ 2025)

Corresponding author: Impact Factor, Order/Field

1. Lu, R. M., Chiang, H. L., Yuan, P. Y., Wang, H. H., Chen, C. Y., Panda, S. S., Liang, K. H., Peng, H. P., Ko, S. H., Hsu, H. J., Kumari, M., Su, Y. J., Tse, Y. T., Chou, N.

L. and **Wu, H. C.*** (2025). Technological advancements in antibody-based therapeutics for treatment of diseases. **Journal of Biomedical Science** *32,* 98. **12.1; 15/189 (7.9 %)** (Springer Nature)

2. Kumari, M., Su, S. C., Lin, H. T., Ko, S. H., Lu, Y. F., Chen, K. C., Chen, W. Y., Wu, M. J., and **Wu, H. C.*** (2025). Safety and immunogenicity of mRNA vaccine against dengue virus serotype 2 with modification of potential key residue for antibody-dependent enhancement. **Vaccine** *57*, 127216. **3.5; 68/195 (34.9)**

3. Lu, R. M., Hsu, H. E., Perez, S. J. L. P., Kumari, M., Chen, G.H., Hong, M. H., Lin, Y. S., Liu, C. H., Ko, S. H., Concio, C. A. P., Su, Y. J., Chang, Y. H., Li, W. S*., and **Wu, H. C.*** (2024). Current landscape of mRNA technologies and delivery systems for new modality therapeutics. **Journal of Biomedical Science** *31:89* **12.1; 15/189 (7.9 %)** (Springer Nature)

4. Panda, S. S., Lee, C. C., Geevimaan, K., Chen, K. C., Yang, S. H., Shen, C. N., Huang, W. C. and **Wu, H. C.*** (2024). Intracellular domain of epithelial cell adhesion molecule induces Wnt receptor transcription to promote colorectal cancer progression. **Journal of Biomedical Science** *31,* 72. **12.1; 15/189 (7.9 %)** (Springer Nature)

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Revised or Submitted manuscripts:

1. Lee, C. C., Su, Y. J., Panda, S. S., Chiu, C. Y., Wu, C. H., Lu, T. M., Li, P. C., Huang, Y. L., Hong, R. L., Hung, S. H., Yee, C., Lai, S. Y., and **Wu, H. C.*** (2025). EpCAM activates the ERK-EGR1 signaling axis and promotes TNF-α-induced the progression of anaplastic thyroid cancer. **Journal of Translational Medicine** (Under revision**).**

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