

Kuang-Wen Liao

- **Research Interests**

1. Antibody engineering
2. Cancer biology
3. Immunology

- **Experience**

2014/8~2017/4 Professor, College of Biological Science and Technology, National Chiao Tung University

2017/5~ present Distinguished Professor, College of Biological Science and Technology, National Chiao Tung University

- **Education**

PhD, National Defense Medical Center Taiwan

- **Honors**

Outstanding Research Award, Ministry of Science and Technology

Liao, Kuang-Wen (Recipient), 2016

Prize: Honorary award

Excellent Teaching Award, National Chiao Tung University

Liao, Kuang-Wen (Recipient), 2011

Prize: Honorary award

- **Patents**

In vivo amelioration of endogenous anti- tumor autoantibodies targeting surface tumor antigens via low- dose p4n

US and PCT Designated states

PCT/US20 17/024905

David Mold (US), Kuang-Wen Liao (TW), Ru Chih Huang (US), Tiffany Jackson (US), Yu- Ling Lin (TW)

THE JOHNS HOPKINS UNIVERSITY (US) and NATIONAL CHIAO TUNG UNIVERSITY (TW)

2019/10 to 2039/10

In vivo amelioration of endogenous anti- tumor autoantibodies targeting surface tumor antigens via low- dose p4n

EP3436008A1

David Mold (US), Kuang-Wen Liao (TW), Ru Chih Huang (US), Tiffany Jackson (US), Yu- Ling Lin (TW)

THE JOHNS HOPKINS UNIVERSITY (US) and NATIONAL CHIAO TUNG
UNIVERSITY (TW)
2017/10 to 2037/10

Complex immuno- gene medical composition for inhibiting tumor cells

USA

US7323450 B2

Rea- Min Chu, Ching- Yi Lin, Ya- Wen Hsiao, Kuang- Wen Liao

National Taiwan University

2008/01 to 2017/12

Liposome and method for producing the same

USA

US8871251 B2

Kuang-Wen Liao, Yen-Ku Liu, Yu- Ling Lin,

Can Heal Biomeditech Corp.

2012/10 to 2028/11

Pharmaceutical carrier and pharmaceutical composition for inhibiting angiogenesis

TWI496583B

Kuang Wen Liao, Shu Yi Ho

National Taiwan University

2012/01 to 2029/12

Pharmaceutical composition of immunoregulation or enhancement of immune response

TW

TWI440478B

Kuang-Wen Liao, Chia-Hung Chen

National Chiao Tung University

2014/06 to 2031/11

Pharmaceutical composition and use for applying 7,7''-dimethoxyagastisflavone in inhibiting tumor metastasis

TWI594752B

Kuang-Wen Liao, Ching-Min Lin, Yu-Ling Lin

National Chiao Tung University

2014/06 to 2031/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.

NZ731906A

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.

National Chiao Tung University

2012/10 to 2028/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.

US20170342137A1

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.

National Chiao Tung University

2012/10 to 2028/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.

JP2017209100A

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.

National Chiao Tung University

2017/10 to 2033/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.

PH12017000140A1

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.

National Chiao Tung University

2018/10 to 2034/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.

IL251997D0

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.

National Chiao Tung University

2017/10 to 2033/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.

KR20170134199A

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.

National Chiao Tung University

2017/10 to 2033/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.

RU2017115201A

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.

National Chiao Tung University

2018/10 to 2034/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.

AU2017203225B2

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.
National Chiao Tung University
2018/10 to 2034/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.
CA2967597A1

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.
National Chiao Tung University
2018/10 to 2034/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.
SG10201704029WA

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.
National Chiao Tung University
2018/10 to 2034/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.
BR102017010401A2

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.
National Chiao Tung University
2018/10 to 2034/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.
MX2017006603A

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.
National Chiao Tung University
2018/10 to 2034/11

A monoclonal antibody inhibiting immunosuppressive functions of pathogens, antigen-binding fragments thereof, and hybridomas producing such antibody.
US20200010534A1

Kuang-Wen Liao, Ting-Yan Jian, Yu- Ling Lin.
National Chiao Tung University
2019/10 to 2035/11

Publications

*as the corresponding author

1. Hsiao-Chin Hong, Cheng-Hsun Chuang, Wei-Chih Huang, Shun-Long Weng, Chia-Hung Chen, Kuang-Hsin Chang, Kuang-Wen Liao*, Hsien-Da Huang (2020, August). A panel of eight microRNAs is a good predictive parameter for triple-negative breast cancer relapse. *Theranostics*, 10(19):8771-8789.
2. Kai-Fu Chang, Jinghua Tsai Chang, Xiao-Fan Huang, Yu-Ling Lin, Kuang-Wen Liao, Chien-Wei Huang and Nu-Man Tsai (2020, May). Antitumor Effects of N-Butylidenephthalide Encapsulated in Lipopolyplexs in Colorectal Cancer Cells. *Molecules*, 25(10):2394.
3. Yu-Wen Huang, Chih-Yang Lin, Hsiao-Chi Tsai, Yi-Chin Fong, Chien-Kuo Han, Yuan-Li Huang, Wen-Tung Wu, Shih-Ping Cheng, Hao-Chiun Chang, Kuang-Wen Liao, Shih-Wei Wang, Chih-Hsin Tang (2020, May). Amphiregulin promotes cisplatin chemoresistance by upregulating ABCB1 expression in human chondrosarcoma. *Aging*, 12.
4. Mau-Shin Chi, Minesh P. Mehta, Kai-Lin Yang, Hung-Chih Lai, Ying-Chu Lin, Hui-Ling Ko, Yu-Shan Wang, Kuang-Wen Liao and Kwan-Hwa Chi (2020, Mar). Putative Abscopal Effect in Three Patients Treated by Combined Radiotherapy and Modulated Electrohyperthermia. *Frontiers in Oncology*, 10:254.
5. Shu-Yi Ho, Pin-Rong Chen, Chia-Hung Chen, Nu-Man Tsai, Yu-Hsin Lin, Chen-Si Lin, Cheng-Hsun Chuang, Xiao-Fan Huang, Yi-Lin Chan, Yen-Ku Liu, Chen-Han Chung, Shun-Long Weng & Kuang-Wen Liao* (2020, Mar). Lipoplex-based targeted gene therapy for the suppression of tumours with VEGFR expression by producing anti-angiogenic molecules. *Journal of Nanobiotechnology*, 18(1).
6. Shih-Wei Wang, Chien-Hsing Lee, Ming-Shen Lin, Chih-Wen Chi, Yu-Jen Chen, Guo-Shou Wang, Kuang-Wen Liao, Li-Pin Chiu, Shu-Hui Wu, Dong-Ming Huang, Luke Chen and Yung-Shuen Shen (2020, Feb). ZnO Nanoparticles Induced Caspase-Dependent Apoptosis in Gingival Squamous Cell Carcinoma through Mitochondrial Dysfunction and p70S6K Signaling Pathway. *International Journal of Molecular Sciences*, 21(5):1612.
7. Chia-Yen Huang, Kuang-Wen Liao*, Chih-Hung Chou, Sirjana Shrestha, Chi-Dung Yang, Men-Yee Chiew, Hsin-Tzu Huang, Hsiao-Chin Hong, Shih-Hung Huang, Tzu-Hao Chang and Hsien-Da Huang (2020, Jan). Pilot Study to Establish a Novel Five-Gene Biomarker Panel for Predicting Lymph Node Metastasis in Patients with Early Stage Endometrial Cancer. *Frontiers in Oncology*, 9:1508.
8. Lin YL, Huang XF, Chang KF, Liao KW, Tsai NM (2020, Jan). Encapsulated n-Butylidenephthalide Efficiently Crosses the Blood–Brain Barrier and Suppresses Growth of Glioblastoma. *International Journal of Nanomedicine*, 15:749-760.
9. Yu-Ling Lin, Nu-Man Tsai, Chia-Hung Chen, Yen-Ku Liu, Chung-Jen Lee, Yi-Lin Chan, Yu-Shan Wang, Yuan-Ching Chang, Chi-Hsin Lin, Tse-Hung Huang, Chao Ching Wang, Kwan-Hwa Chi and Kuang-Wen Liao*. (2019, Dec). Specific drug delivery efficiently induced human breast tumor regression using a lipoplex by non-covalent association with anti-tumor antibodies. *Journal of Nanobiotechnology*, 17:25.

10. Tai HC, Lee TH, Tang CH, Chen LP, Chen WC, Lee MS, Chen PC, Lin CY, Chi CW, Chen YJ, Lai CT, Chen SS, Liao KW, Lee CH, Wang SW (2019, Apr). Phomaketide A Inhibits Lymphangiogenesis in Human Lymphatic Endothelial Cells. *Marine Drugs*.
11. Chen WC, Wang SW, Lin CY, Tsai CH, Fong YC, Lin TY, Weng SL, Huang HD, Liao KW*, Tang CH (2019, Mar). Resistin Enhances Monocyte Chemoattractant Protein-1 Production in Human Synovial Fibroblasts and Facilitates Monocyte Migration. *Cellular Physiology and Biochemistry*.
12. Lin YL, Chen CH, Liu YK, Huang TH, Tsai NM, Tzou SC, Liao KW* (2019, Feb). Lipo-PEG-PEI complex as an intracellular transporter for protein therapeutics. *International Journal of Nanomedicine*, 14 1119–1130.
13. Gao HW, Chang KF, Huang XF, Lin YL, Weng JC, Liao KW, Tsai NM (2018, Dec). Antitumor Effect of n-Butylidenephthalide Encapsulated on B16/F10 Melanoma Cells In Vitro with a Polycationic Liposome Containing PEI and Polyethylene Glycol Complex. *Molecules*.
14. Lee CJ, Wang CC, Chen M, Chuang KH, Cheng TL, Jian TY, Wang YM, Huang TH, Liao KW*, Tzou SC (2018, Oct). Development of an inflammatory tissue- selective chimeric TNF receptor. *Cytokine*.
15. Chuang YC, Wu HY, Lin YL, Tzou SC, Chuang CH, Jian TY, Chen PR, Chang YC, Lin CH, Huang TH, Wang CC, Chan YL, Liao KW* (2018, May). Blockade of ITGA2 Induces Apoptosis and Inhibits Cell Migration in Gastric Cancer. *Biological Procedures Online*.
16. Hsu WT, Ho SY, Jian TY, Huang HN, Lin YL, Chen CH, Lin TH, Wu MS, Wu CJ, Chan YL, Liao KW*. (2018, May). Helicobacter pylori-derived heat shock protein 60 increases the induction of regulatory T-cells associated with persistent infection. *Microbial Pathogenesis*.
17. Ho SY, Chang BH, Chung CH, Lin YL, Chuang CH, Hsieh PJ, Huang WC, Tsai NM, Huang SC, Liu YK, Lo YC, Liao KW (2018, Apr). Development of a computational promoter with highly efficient expression in tumors. *BMC Cancer*. 本人為通訊作者.
18. Chi MS, Yang KL, Chang YC, Ko HL, Lin YH, Huang SC, Huang YY, Liao KW, Kondo M, Chi KH (2018, Jan). Comparing the effectiveness of combined external beam radiation and hyperthermia versus external beam radiation alone in treating patients with painful bony metastases: a phase 3 prospective, randomized, controlled trial. *International Journal of Radiation Oncology Biology Physics*, 100(1), 78-87.
19. Chou CH, Shrestha S, Yang CD, Chang NW, Lin YL, Liao KW, Huang WC, Sun TH, Tu SJ, Lee WH, Chiew MY, Tai CS, Wei TY, Tsai TR, Huang HT, Wang CY, Wu HY, Ho SY, Chen PR, Chuang CH, Hsieh PJ, Wu YS, Chen WL, Li MJ, Wu YC, Huang XY, Ng FL, Buddhakosai W, Huang PC, Lan KC, Huang CY, Weng SL, Cheng YN, Liang C, Hsu WL, Huang HD (2018, Jan). miRTarBase update 2018: a resource for experimentally validated microRNA-target interactions. *NUCLEIC ACIDS RESEARCH*, gkx1067, <https://doi.org/10.1093/nar/gkx1067>.
20. Yeh KT, Wu WT, Subeq YM, Niu CC, Liao KW, Chen IH, Lee RP (2017, Nov). Effects of freshwater clam extract on fracture induced inflammation at early stage. *Experimental and Therapeutic Medicine*, 14, 5039-5044.
21. Lin CM, Lin YL, Ho SY, Chen PR, Tsai YH, Chung CH, Hwang CH, Tsai NM, Tzou SC, Ke CY, Chang J, Chan YL, Wang YS, Chi KH, Liao KW* (2017, Sep). The inhibitory effect of 7, 7 "-dimethoxyagastisflavone on the metastasis of melanoma cells

via the suppression of F-actin polymerization. *Oncotarget*, 8(36), 60046-60059. (Accepted).

22. Chen CL, Chiang CY, Liao KW, Ho SY, Chang YF, Lim KH, Hsieh RK, Lin YL, Su YW (2017, Mar). cIAP-2 Expression Increases in Elderly Patients with Squamous Cell Carcinoma of the Head and Neck. *International Journal of Gerontology*, 11(1), 22-26.
23. Lin YL, Tsai NM, Hsieh CH, Ho SY, Chang J, Wu HY, Hsu MH, Chang CC, Liao KW*, Jackson T. L. B., Mold D. E., Huang R.C.C. (2016, Nov). In vivo amelioration of endogenous antitumor autoantibodies via low-dose P4N through the LTA4H/activin A/BAFF pathway. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*, 113(48), E7798-E7807. 本人為通訊作者.
24. Huang KC, Chiu YH, Liao KW, Ke CY, Lee CJ, Chao YFC., Lee RP (2016, Sep). Prophylactic acetylsalicylic acid attenuates the inflammatory response but fails to protect exercise-induced liver damage in exercised rats. *EUROPEAN JOURNAL OF PHARMACOLOGY*, 786, 204-211.
25. Ke CY, Yang FL, Wu WT, Chung CH, Lee RP, Yang WT, Subeq YM, Liao KW* (2016, Feb). Vitamin D-3 Reduces Tissue Damage and Oxidative Stress Caused by Exhaustive Exercise. *International Journal of Medical Sciences*, 13(2), 147- 153. 本人為通訊作者.
26. Lin YL, Chen CH, Wu HY, Tsai NM, Jian TY, Chang YC, Lin CH, Wu CH, Hsu FT, Leung TK, Liao KW* (2016, Feb). Inhibition of breast cancer with transdermal tamoxifen-encapsulated lipoplex. *JOURNAL OF NANOBIO TECHNOLOGY*, 14:11. (Accepted).
27. Chou CH, Chang NW, Shrestha S, Hsu SD, Lin YL, Lee WH, Yang CD, Hong HC, Wei TY, Tu SJ, Tsai TR, Ho SY, Jian TY, Wu HY, Chen PR, Lin NC, Huang HT, Yang TL, Pai CY, Tai CS, Chen WL, Huang CY, Liu CC, Weng SL, Liao KW, Hsu WL, Huang HD (2015, Nov). miRTarBase 2016: updates to the experimentally validated miRNA-target interactions database. *NUCLEIC ACIDS RESEARCH*, 44(Database issue), D239–D247.
28. Yeh KT, Wu WT, Subeq YM, Niu CC, Liao KW, Chen IH, Wang JH, Lee RP (2015, Oct). Non-Steroid Anti-Inflammatory Drugs Are Better than Acetaminophen on Fever Control at Acute Stage of Fracture. *PLoS One*, 10(10), e0137225.
29. Chi MS, Lee CY, Huang SC, Yang KL, Ko HL, Chen YK, Chung CH, Liao KW, Chi KH (2015, Sep). Double autophagy modulators reduce 2-deoxyglucose uptake in sarcoma patients. *Oncotarget*, 6(30), 29808-29817.
30. Lin YL, Chang KF, Huang XF, Hung CL, Chen SC, Chao WR, Liao KW, Tsai NM (2015, Sep). Liposomal n-butylidenephthalide protects the drug from oxidation and enhances its antitumor effects in glioblastoma multiforme. *International Journal of Nanomedicine*, 10, 6009-6020.