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Current Positions Assistant Professor

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Education

1. M.S. graduate student Department of Biomedical Imaging and Radiological Sciences, National Yang-Ming University, Taipei, Taiwan
2. Ph.D. Department of Biomedical Imaging and Radiological Sciences, National Yang-Ming University, Taipei, Taiwan

Expertise

Tumor oncology, Molecular Image, Molecular MRI, Radiobiology, Immunology, MSCs therapy

Research Interests

Our group is mainly working on therapeutic evaluation of tumor oncology with various molecular image system supports. 1) We had successfully established various molecular image monitoring systems on more than 8 types of cancer models, including glioblastoma, non-small cell lung cancer, hepatocellular carcinoma, bladder cancer, colon cancer, osteosarcoma...etc. 2) For oncology therapies development, we try to identify possible combination treatment strategies, possible Chinese herb and also drug repurposing evaluation. 3) Importantly, we constructed suitable mesenchymal stem cells tracking image system by MRI. This may effectively support cell-based therapy to dynamically identify delivery and treatment efficacy. Cell-based therapy system, is a “Living Drugs” system, which display better potential to fight cancer. Fabricate MSCs based gene delivery system may be used as a promising anti-tumor agent, which could provide a new benefit for cancer patients. 4) Furthermore, we are also trying to establish theranostic probe platform in oncology field by combination of target therapy drug, microRNA expression and MRI, which will be helpful in comprehensive understanding and management of cancer. 5) Immune based antibody therapy is another project of our group. We try to investigate various combination strategy of antibodies combination therapy on melanoma, colon rectal carcinoma and glioblastoma. Several patents was also preparing according to our latest finding. Our researches are focus on comprehensively encompass molecular images and therapeutic strategies to improve the cancer management. Thus, the major GOAL of our research is the provision of new insights into oncology therapeutic approaches and aimed at prolonging the overall patient survival.

Selected Grants:

1. Evaluate therapeutic efficacy and mechanism of combination of poly ADP-ribose polymerase inhibitor with temozolomide, radiation or immune checkpoint inhibitor on glioblastoma.
2. Human induced neural stem cells with programmed cell death protein-1-thymidine kinase expressed for glioblastoma therapy.
3. Delivery of miRNA124 or miRNA145 and PD-1 dual expression vector to glioblastoma by Wharton’s Jelly mesenchymal stem cells suppress tumor progression.

Selected Publications

1. CH Chen*, **Hsu FT***, WL Chen and JH Chen (2021). Induction of Apoptosis, Inhibition of MCL-1, and VEGF-A Expression Are Associated with the Anti-Cancer Efficacy of Magnolol Combined with Regorafenib in Hepatocellular Carcinoma. *Cancers (Basel)* 13(9):2066.
2. **Hsu FT**, YC Liu, CL Tsai, PF Yueh, CH Chang and KL Lan (2021). Preclinical Evaluation of Recombinant Human IL15 Protein Fused with Albumin Binding Domain on Anti-PD-L1 Immunotherapy Efficiency and Anti-Tumor Immunity in Colon Cancer and Melanoma. *Cancers (Basel)* 13(8), 1789
3. Liu YC, Tsai JJ, YS Weng, **Hsu FT** (2020). Regorafenib suppresses epidermal growth factor receptor signaling-modulated progression of colorectal cancer. *Biomedicine & Pharmacotherapy*, 128:110319.
4. Su CM, Weng YS, Kuan LY, **Hsu FT** (2020). Suppression of PKC NF- B activation and apoptosis induction through extrinsic/intrinsic pathways are associated magnolol-inhibited tumor progression in colorectal cancer *in vitro* and *in vivo*. *International Journal of Molecular Sciences* 21(10), 3527.
5. Chen JH, Chiang IT, **Hsu FT** (2019): Protein kinase B inactivation was associated with magnolol-enhanced therapeutic efficacy of sorafenib in hepatocellular carcinoma *in vitro* and *in vivo*. *Cancers* 2020, 12(1), 87.
6. Chou YC, Chang MY, Lee HT, Shen CC, Harnod T, Liang YJ, Wu RS, Lai KC, **Hsu FT***, Chung JG*. Phenethyl Isothiocyanate Inhibits In Vivo Growth of Xenograft Tumors of Human Glioblastoma Cells. *Molecules* 23(9), 2305. pii: E2305. doi: 10.3390/molecules23092305. (*co-corresponding author)
7. **Hsu FT**, Wei ZH, Hsuan CY, Lin W, Su YC, Liao CH, Hsieh CL (2018): MRI tracking of polyethylene glycol-coated superparamagnetic iron oxide-labeled placenta-derived mesenchymal stem cells toward glioblastoma stem-like cells in a mouse model. *Artificial Cells Nanomedicine and Biotechnology* 1-12.
8. **Hsu FT**, Liu HS, Ahmed AA, Tsai PH, Kao YC, Lu CF, Huang SH, Chen CY (2018): Assessing the Selective Therapeutic Efficacy of Superparamagnetic Erlotinib Nanoparticles in Lung Cancer by Using Quantitative Magnetic Resonance Imaging and a Nuclear Factor Kappa-B Reporter Gene System. *Nanomedicine-Nanotechnology Biology and Medicine* 14(3):1019-1031. (**first author**)
9. **Hsu FT**, Chiang IT, Wang WS (2020): Induction of apoptosis through extrinsic/intrinsic pathways and suppression of ERK/NF- B signaling participate in the imipramine-inhibited progression of glioblastoma. *Journal of Cellular and Molecular Medicine* 24(7): 3982-4000.

Selected Patents

1. Polyethylene glycol (PEG)-coated Superparamagnetic iron oxide (SPIO) fabrication for cancer therapeutic and diagnosis. *Certification ID: I644687, Taiwan*