

## 張牧新(Peter Mu-Hsin Chang)

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### 現職：

2015-迄今 臺北榮民總醫院腫瘤醫學部主治醫師

2018-迄今 國立陽明交通大學醫學院副教授

### 經歷：

2015-2016 訪問學者，史丹福大學化學與系統生物學系

2013-2018 國立陽明大學醫學院助理教授

2008-2013 國立陽明大學醫學院講師

2008-2015 臺北榮總醫院血液腫瘤科主治醫師

2002-2008 臺北榮總醫院內科部住院醫師

### 學歷：

2009-2013 國立陽明大學臨床醫學研究所，博士

1994-2000 成功大學醫學院醫學系，醫學博士

### 專長：

腫瘤抗藥性、臨床人體試驗、藥物開發、抗癌藥物發展、腫瘤學

### Patent:

CY001: 為一幹細胞抑制劑可以和化療合併使用，目前 CY001 完成肺腺癌臨床試驗(phase 1B)，此外 CY001 也有應用在胰臟癌病人，兩個臨床觀察都有看到有部份病人可以顯著增加存活期。

- 黃奇英(Chi-Ying Huang)、張牧新(Peter Mu-Hsin Chang)、陳冠宇(Kuan-Yu Chen)、吳駿翹(Alexander Jun-Hong Wu)、鄭大山(Tai-Shan Cheng)、余晟豪(Cheng-Hao Yu)，“抗藥性癌症之治療方法/Method for Treating Drug Resistant Cancer” "Method for Treating Drug Resistant Cancer" (韓國第 10-2053507 號；2019) (台灣第 I 735413 號；2021)(其它國家專利申請中)

### 近五年內獲獎情形及重要會議邀請演講:

1. The 3rd Stanford-Taiwan ALDH2 Deficiency Research (STAR) Consortium Symposium, National Taiwan University Medical College, July 29th , 2017 (Invited Speaker)
2. IO Forum for Head and Neck Cancer, Taiwan Head and Neck Society, October 28th, 2017 (Invited Speaker)
3. 2018 Molecular Tumor Board: How Comprehensive Genomics Profiling Unlocks Treatment Opportunity (Invited Speaker, first tumor board hosted by Foundation Medicine in Taiwan)
4. 14<sup>th</sup> Annual Meeting of Taiwan Head and Neck Society in conjunction with 2021 Ji-Chuan Yang H&N lecture (Invited Speaker & Panelist)

### 近五年內執行之多國多中心臨床試驗 (Principal Investigator):

1. Phase I, Open-label study to evaluate safety, tolerability and preliminary efficacy of modified Salmonella typhimurium SGN1 in Patients with Advanced Solid Tumor
2. A Phase 1/2, open-label, multi-center study of the safety and efficacy of KY1044 as single agent and in combination with anti-PD-L1 (atezolizumab) in adult patients with selected advanced malignancies
3. A Phase II, Multicenter, Randomized, Open Label, Parallel-Arm, Umbrella Study of Avelumab (MSB0010718C) in Combination with Other Anti-Tumor Agents as a Maintenance Treatment in Participants with Locally Advanced or Metastatic Urothelial Carcinoma Whose Disease Did Not Progress with First Line Platinum-Containing Chemotherapy
4. A Phase 1/2 Study of NM21-1480 (Anti-PDL-1/Anti-4-1BB/Anti-HSA Tri-Specific Antibody) in Adult Patients with Advanced Solid Tumors
5. A Phase 1 First-in-Human dose escalation and expansion study for the evaluation of safety, pharmacokinetics, pharmacodynamics and anti-tumor activity of SAR441000 administered intratumorally as monotherapy and in combination with cemiplimab in patients with advanced solid tumors
6. A Phase 1b Study of ASP1951, a GITR Agonistic Antibody, as a Single Agent and in Combination with Pembrolizumab in Subjects with Advanced Solid Tumors
7. A Phase III Randomized Clinical Trial Of Pembrolizumab (MK-3475) Versus Paclitaxel, Docetaxel Or Vinflunine In Subjects With Recurrent Or Progressive Metastatic Urothelial Cancer
8. A Phase III, Randomized, Open-Label, Controlled, Multi-Center, Global Study Of First-Line MEDI4736 Monotherapy And MEDI4736 In Combination With Tremelimumab Versus Standard Of Care Chemotherapy In Patients With Unresectable Stage IV Urothelial Bladder Cancer
9. A Randomized Double-Blind Phase 3 Study Of Avelumab In Combination With Standard Of Care Chemoradiotherapy (Cisplatin Plus Definitive Radiation Therapy) Versus Standard Of Care Chemoradiotherapy In The Front-Line Treatment Of Patients With Locally Advanced Squamous Cell Carcinoma Of The Head And Neck

10. A Phase 1b Study Of ASP1948, Targeting An Immune Modulatory Receptor, As A Single Agent And In Combination With Nivolumab In Subjects With Advanced Solid Tumors
11. An Open-Label, Phase II Study To Evaluate The Efficacy And Safety Of SCB01A In Subjects With Recurrent Or Metastatic Squamous Cell Head And Neck Cancer Who Have Failed Platinum-Based Treatment

### **Textbook Chapter:**

1. Jeffrey J-P Tsai and Ka-Lok Ng . Application of Omics, AI and Blockchain in Bioinformatics Research-Chapter 4. Analysis of Circulating Tumor DNA in Patients with Cancer: A Clinical Perspective (Chi-Chun Yeh and Peter Mu-Hsin Chang) (1) (ISBN: 978-981-120-357-2). Singapore : World Scientific Publishing Co Pte Ltd. Oct, 2019.

### **Publications (Recent 5 years):**

1. Li LJ, Li CH, **Chang PM**, Lai TC, Yong CY, Feng SW, Hsiao M, Chang WM, Huang CF. Dehydroepiandrosterone (DHEA) Sensitizes Irinotecan to Suppress Head and Neck Cancer Stem-Like Cells by Downregulation of WNT Signaling. *Front Oncol*. 2022; 12:775541.
2. Tang CY, Hang JF, Hung YP, Chiu NC, Lai JI, Chen MH, Liu CY, Yang MH, Chao Y, **Chang PM\***. A generational comparison for unfavorable cancer of unknown primary in a single institute over 20 years. *Cancer Med*. 2022 Jul 3. Online ahead of print. (\*Corresponding author)
3. Lai CL, Chen TH, **Chang PM**, Tai SK, Chu PY, Yang MH. Efficacy of cetuximab-containing regimens in the treatment of recurrent/metastatic head and neck cancer after progression to immune checkpoint inhibitors. *J Chin Med Assoc*. 2022; 85(6):687-692.
4. Li LJ, **Chang PM**, Li CH, Chang YC, Lai TC, Su CY, Chen CL, Chang WM, Hsiao M, Feng SW. FAS receptor regulates NOTCH activity through ERK-JAG1 axis activation and controls oral cancer stemness ability and pulmonary metastasis. *Cell Death Discov*. 2022; 8(1):101.
5. Lee TL, Wei PY, Yang MH, **Chang PM**, Wang LW, Tai SK\*. Tongue conservation treatment for oral tongue squamous cell carcinoma with induction chemotherapy, surgery, and risk-adapted adjuvant therapy: A phase II trial. *Cancer Rep (Hoboken)*. 2022; 5(2):e1456.
6. Chang YC, **Chang PM**, Li CH, Chan MH, Lee YJ, Chen MH, Hsiao M. Aldolase A and Phospholipase D1 Synergistically Resist Alkylating Agents and Radiation in Lung Cancer. *Front Oncol*. 2022; 11:811635.
7. Cheng CT, Wang TY, Chen PR, Wu WH, Lai JM, **Chang PM**, Hong YR, Huang CF, Wang FS. Computer-Aided Design for Identifying Anticancer Targets in Genome-Scale Metabolic Models of Colon Cancer. *Biology (Basel)*. 2021; 10(11):1115.
8. Chung SY, Hung YP, Pan YR, Chang YC, Wu CE, Hsu DS, **Chang PM**, Lu ML, Huang CF, Su Y, Hsiao M, Yeh CN\*, Chen MH\*. Ruxolitinib Combined with Gemcitabine against Cholangiocarcinoma Growth via the JAK2/STAT1/3/ALDH1A3 Pathway. *Biomedicines*. 2021; 9(8):885.
9. Lee NY, Ferris RL, Psyrrri A, Haddad RI, Tahara M, Bourhis J, Harrington K, **Chang PM**, Lin

JC, Razaq MA, Teixeira MM, Lövey J, Chamois J, Rueda A, Hu C, Dunn LA, Dvorkin MV, De Beukelaer S, Pavlov D, Thurm H, Cohen E. Avelumab plus standard-of-care chemoradiotherapy versus chemoradiotherapy alone in patients with locally advanced squamous cell carcinoma of the head and neck: a randomised, double-blind, placebo-controlled, multicentre, phase 3 trial. *Lancet Oncol.* 2021; 22(4):450-462.

10. Chen TH, **Chang PM**, Yang MH. Combination of pembrolizumab and lenvatinib is a potential treatment option for heavily pre-treated recurrent and metastatic head and neck cancer. *J Chin Med Assoc.* 2021; 84(4):361-367.
11. Lu HJ, Tseng SW, Peng CY, Tseng HC, Hsin CH, Chen HL, Huang WS, Wu MF, Yang MH, **Chang PM\***. Predictors of early progression after curative resection followed by platinum-based adjuvant chemoradiotherapy in oral cavity squamous cell carcinoma. *Postgrad Med.* 2021; 133(3):377-384. (\*Corresponding author)
12. Hu YF, Wu CH, Lai TC, Chang YC, Hwang MJ, Chang TY, Weng CH, **Chang PM**, Chen CH, Mochly-Rosen D, Huang CF, Chen SA. ALDH2 deficiency induces atrial fibrillation through dysregulated cardiac sodium channel and mitochondrial bioenergetics: A multi-omics analysis. *Biochim Biophys Acta Mol Basis Dis.* 2021; 1867(5):166088.
13. Lai JI, Tseng YJ, Chen MH, Huang CF, **Chang PM\***. Clinical Perspective of FDA Approved Drugs With P-Glycoprotein Inhibition Activities for Potential Cancer Therapeutics. *Front Oncol.* 2020; 10:561936. (\*Corresponding author)
14. Lai TC, Fang CY, Jan YH, Hsieh HL, Yang YF, Liu CY, **Chang PM\***, Hsiao M\*. Kinase shRNA screening reveals that TAOK3 enhances microtubule-targeted drug resistance of breast cancer cells via the NF- $\kappa$ B signaling pathway. *Cell Commun Signal.* 2020; 18(1):164. (\*Corresponding author)
15. **Chang PM**. Pulmonary embolism: A warning sign of occult malignancy. *J Chin Med Assoc.* 2020; 83(8):693-694.
16. Wu WH, Li FY, Shu YC, Lai JM, **Chang PM**, Huang CF, Wang FS\*. Oncogene inference optimization using constraint-based modelling incorporated with protein expression in normal and tumour tissues. *R Soc Open Sci.* 2020 ; 7(3):191241.
17. Tan KT, Yeh CN, Chang YC, Cheng JH, Fang WL, Yeh YC, Wang YC, Hsu DS, Wu CE, Lai JI, **Chang PM**, Chen MH, Lu ML, Chen SJ, Chao Y, Hsiao M, Chen MH\*. *PRKDC*: new biomarker and drug target for checkpoint blockade immunotherapy. *J Immunother Cancer.* 2020 ; 8(1). pii: e000485.
18. Lai JI, Reddy AK, Newberg JY, Montesion M, **Chang PM\***. High-Grade Salivary Gland Ductal Carcinoma With Unusual *EGFR* Amplification Responsive to Afatinib. *JCO Precis Oncol.* 2019; 3:1-5. (\*Corresponding author)
19. Huang TH, Wu ATH, Cheng TS, Lin KT, Lai CJ, Hsieh HW, **Chang PM**, Wu CW, Huang CF\*, Chen KY\*. In silico identification of thiostrepton as an inhibitor of cancer stem cell growth and an enhancer for chemotherapy in non-small-cell lung cancer. *J Cell Mol Med.* 2019; (12):8184-8195.
20. Chen TH, **Chang PM**, Yang MH\*. Novel immune-modulating drugs for advanced head and

neck cancer. *Head Neck*. 2019; 41 Suppl 1:46-56.

21. Lu HJ, Hsieh CC, Yeh CC, Yeh YC, Wu CC, Wang FS, Lai JM, Yang MH, Wang CH, Huang CF\*, **Chang PM\***. Clinical, pathophysiologic, and genomic analysis of the outcomes of primary head and neck malignancy after pulmonary metastasectomy. *Sci Rep*. 2019; 9(1):12913. (\*Corresponding author)
22. Hsu JH, **Chang PM**, Cheng TS, Kuo YL, Wu AT, Tran TH, Yang YH, Chen JM, Tsai YC, Chu YS, Huang TH\*, Huang CF\*, Lai JM\*. Identification of Withaferin A as a Potential Candidate for Anti-Cancer Therapy in Non-Small Cell Lung Cancer. *Cancers (Basel)*. 2019; 11(7): 1003.
23. Chang WM, Chang YC, Yang YC, Lin SK, **Chang PM\***, Hsiao M\*. AKR1C1 controls cisplatin-resistance in head and neck squamous cell carcinoma through cross-talk with the STAT1/3 signaling pathway. *J Exp Clin Cancer Res*. 2019; 38(1):245. (\*Corresponding author)
24. Chen JH, Huang WC, Bamodu OA\*, **Chang PM**, Chao TY\*, Huang TH\*. Monospecific antibody targeting of CDH11 inhibits epithelial-to-mesenchymal transition and represses cancer stem cell-like phenotype by up-regulating miR-335 in metastatic breast cancer, in vitro and in vivo. *BMC Cancer*. 2019; 19(1):634.
25. Wang SJ, Huang WS, Chuang CM, Chang CH, Lee TW, Ting G, Chen MH, **Chang PM**, Chao TC, Teng HW, Chao Y, Chen YM, Lin TP, Chang YJ, Chen SJ, Huang YR, Lan KL\*. A phase 0 study of the pharmacokinetics, biodistribution, and dosimetry of <sup>188</sup>Re-liposome in patients with metastatic tumors. *EJNMMI Res*. 2019; 9(1):46.
26. Chen JM, Yang TT, Cheng TS, Hsiao TF, **Chang PM**, Leu JY, Wang FS, Hsu SL, Huang CF, Lai JM\*. Modified Sijunzi decoction can alleviate cisplatin-induced toxicity and prolong the survival time of cachectic mice by recovering muscle atrophy. *J Ethnopharmacol*. 2019; 233:47-55.
27. **Chang PM**, Cheng CT, Wu RC, Chung YH, Chiang KC, Yeh TS, Liu CY, Chen MH, Chen MH\*, Yeh CN\*. Nab-paclitaxel is effective against intrahepatic cholangiocarcinoma via disruption of desmoplastic stroma. *Oncol Lett*. 2018; 16(1):566-572.
28. **Chang PM**, Chen CH, Yeh CC, Lu HJ, Liu TT, Chen MH, Liu CY, Wu ATH, Yang MH, Tai SK, Mochly-Rosen D\*, Huang CF\*. Transcriptome analysis and prognosis of ALDH isoforms in human cancer. *Sci Rep*. 2018; 8(1):2713.
29. Chen SC, **Chang PM**, Wang HJ, Tai SK, Chu PY\*, Yang MH\*. PD-L1 expression is associated with p16<sup>INK4A</sup> expression in non-oro-pharyngeal head and neck squamous cell carcinoma. *Oncol Lett*. 2018; 15(2):2259-2265.
30. Lin MC, Shueng PW, Chang WK, **Chang PM**, Feng HC, Yang MH, Lou PJ\*. Consensus and clinical recommendations for nutritional intervention for head and neck cancer patients undergoing chemoradiotherapy in Taiwan. *Oral Oncol*. 2018; 81:16-21.
31. Chen WC, Chu PY, Lee YT, Lu WB, Liu CY, **Chang PM\***, Yang MH\*. Pembrolizumab for recurrent/metastatic head and neck squamous cell carcinoma in an Asian population. *Medicine*. 2017; 96(52):e9519. (\*Corresponding author)
32. **Chang PM**, Lu HJ, Wang LW, Tai SK, Chen MH, Chu PY\*, Yang MH\*. Effectiveness of incorporating cetuximab into docetaxel/cisplatin/fluorouracil induction chemotherapy and

chemoradiotherapy for inoperable squamous cell carcinoma of the oral cavity: A phase II study. *Head Neck*. 2017; 39(7), 1333-42.

33. Wu HQ, Cheng ML, Lai JM, Wu HH, Chen MC, Liu WH, Wu WH, **Chang PM**, Huang CF, Tsou AP, Shiao MS\*, Wang FS\*. Flux balance analysis predicts Warburg-like effects of mouse hepatocyte deficient in miR-122a. *PLoS Computational Biology*. 2017; 13(7), e1005618.
34. Lu HJ, **Chang PM\***. How to treat recurrent/metastatic head and neck cancer: the economic issue in real-world practice. *Curr Med Res Opin*. 2017; 33(4), 779-80. (\*Corresponding author)
35. Chang YC, Chi LH, Chang WM, Su CY, Lin YF, Chen CL, Chen MH, **Chang PM\***, Wu AT\*, Hsiao M\*. Glucose transporter 4 promotes head and neck squamous cell carcinoma metastasis through the TRIM24-DDX58 axis. *J Hematol Oncol*. 2017; 10(1), 11. (\*Corresponding author)