

## Clinical Immunology laboratory

### I- Lab Introduction:

- The molecular pathogenic mechanisms in inflammatory immune microenvironments
- R & D of natural drugs and health products for inflammatory immune diseases

### II- Principal Investigator: Po-Jen Chen, Ph.D.

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#### Education:

School	Institution	Degree
National Defense Medical Center	Graduate Institute of Life Sciences	Ph.D.
Chang Gung University	Department of Medical Biotechnology and Laboratory Science	M.S.
Chung Shan Medical University	Department of Biomedical Sciences	B.S.

#### Experience:

Year	Institute	Title
2021/07-present	Medical Research Department E-DA Hospital	Assistant Research Fellow
2024/02-present	Graduate Institute of Medicine I-Shou University	Adjunct Assistant Professor
2018/08-2021/07	Department of Cosmetic Science Providence University	Assistant Professor
2014/12-2018/07	Healthy Aging Research Center Chang Gung University	Postdoctoral Fellow

2012/05-2014/12	Genomics Research Center Academia Sinica	Postdoctoral Fellow
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### III- Members :

- **Collaborating Investigators:**

Yu-Chieh Su, M.D.     Director   Cancer Resource Center

Ching-Fang Wu, M.D.   Director   Division of Nephrology

Jian-Han Chen, M.D.   Director   Bariatric and Metabolism Surgery Center

- **Laboratory members:**

Chun-Hong Chen   Ph.D.   Postdoctoral Fellow

Yu-Hsin Kuan     M.S.   Research Assistant

Sheng-Chieh Tsai   M.S.   PhD student

### IV- Techniques :

- Cellular functions and molecular mechanisms in inflammatory immune diseases
- Disease animal models of inflammatory immune diseases
- Development of anti-inflammatory and anticancer natural drugs
- Development of anti-obesity health products

**V- Research Grant (2021-) :**

<b>Project Title</b>	<b>P.I.</b>	<b>Source</b>	<b>Duration</b>
Development of <i>Bletilla formosana</i> for colorectal cancer: therapeutic effects and mechanisms of action	Chen, PJ, Ph.D.	NSTC	2023/08~ 2024/07
Preclinical study of the bioactive components from <i>Bletilla formosana</i> for treating acute liver injury and acute respiratory distress syndrome	Chen, PJ, Ph.D.	NSTC	2020/08~ 2023/07
Exploitation of anti-inflammatory active ingredients from Taiwan's native Orchidaceae and their therapeutic application in improving psoriasis. (I)	Chen, PJ, Ph.D.	NCKU/ E-Da	2024/01~ 2024/12
Research on the effect of phytochemicals isolated from CT01 on browning of white adipose	Chen, PJ, Ph.D.	NCKU/ E-Da	2023/01~ 2023/12
Research and development of natural products for treating colorectal cancers	Chen, PJ, Ph.D.	I-Shou University	2022/05~ 2023/04
The potential of neutrophils as a therapeutic target in tumor immune microenvironments	Chen, PJ, Ph.D.	E-Da Hospital	2022/01~ 2022/12
Investigation of anti-cancer secondary metabolites in Taiwanese soft corals <i>Lobophytum</i> spp. and exploration of their potential in colorectal cancer treatment	Chang, YC, Ph.D./ Chen, PJ, Ph.D.	NSTC	2023/08~ 2024/07
Development of Taiwan's orchids as functional foods for inflammatory metabolic disorders (2/3)	Hwang, TL, Ph.D./ Chen, PJ, Ph.D.	NSTC	2023/07~ 2024/06
Development of Taiwan's orchids as functional foods for inflammatory metabolic disorders (1/3)	Hwang, TL, Ph.D./ Chen, PJ, Ph.D.	NSTC	2022/07~ 2023/06
STIP1-mediated immune microenvironment in ovarian cancers	Chen, SH, Ph.D./ Chen, PJ, Ph.D.	NSTC	2021/08~ 2022/07
Marine natural sesterterpenoid compound targets hepatic stellate cells for treating liver disorders	Kuo, LM, M.D./ Chen, PJ, Ph.D.	NSTC	2021/08~ 2022/07

**VI- Publication (2021-) :** #equal contribution; \*correspondence**Representative publication**

1. **Chen PJ**, Chen SH, Wu CF, Chen YL, Wang YH, Lin CY, Chen CH, Kao TI, Tsai YF, and Hwang TL. Ribociclib leverages phosphodiesterase 4 inhibition in the treatment of neutrophilic inflammation and acute respiratory distress syndrome. *Journal of Advanced Research*, 2024 acceptance (IF: 10.7; Rank: 10/73 (13.7%), Multidisciplinary Sciences)
2. **Chen PJ**, Tseng HH, Wang YH, Fang SY, Chen SH, Chen CH, Tsai SC, Chang YC, Tsai YF, and Hwang TL. Palbociclib blocks neutrophilic PI3K activity to alleviate psoriasiform dermatitis. *British Journal of Pharmacology*, 2023 Aug; 180(16):2172-88 (IF: 7.3; Rank: 25/277 (9.0%), Pharmacology & Pharmacy)
3. Su YC, Lee WC, Wang CC, Yeh SA, Chen WH, and **Chen PJ\***. Targeting PI3K/AKT/mTOR signaling pathway as a radiosensitization in head and neck squamous cell carcinomas. *International Journal of Molecular Sciences*, 2022 Dec; 23(24), 15749. (IF: 5.6; Rank: 66/285 (23.1%), Biochemistry & Molecular Biology)
4. Wagdy R<sup>#</sup>, **Chen PJ**<sup>#</sup>, Hamed MM, Darwish S, Chen SH, Abadi AH, Abdel-Halim M, Hwang TL, and Engel M. From EGFR kinase inhibitors to anti-inflammatory drugs: Optimization and biological evaluation of (4-(phenylamino)quinazolinyl)-phenylthiourea derivatives as novel NF-κB inhibitors. *Bioorganic Chemistry*, 2022 Oct; 127, 105977. (IF: 5.1; Rank: 7/52 (13.5%), Chemistry, Organic)
5. Chang KC, Chang YH, Yen CF, Chen JS, **Chen PJ\***, Lin CY, Griffiths M D, Potenza M N, Pakpour A H. A longitudinal study of the effects of problematic smartphone use on social functioning among people with schizophrenia: Mediating roles for sleep quality and self-stigma. *Journal of Behavioral Addictions*, 2022 Jul; 11(2), 567-576. (IF: 7.8; Rank: 13/144 (9.0%), Psychiatry)
6. Darwish S<sup>#</sup>, **Chen PJ**<sup>#</sup>, Hamed MM, Wagdy R, Chen SH, Abadi AH, Abdel-Halim M, Hwang TL, and Engel M. Development of (4-phenylamino)quinazoline alkylthiourea derivatives as novel NF-κB inhibitors. *Pharmaceuticals*, 2022 Jun; 15(7), 778. (IF: 4.6; Rank: 72/277 (26%), Pharmacology & Pharmacy)
7. Chen YY<sup>#</sup>, Chen LY<sup>#</sup>, **Chen PJ**<sup>#</sup>, El-Shazly M, Peng BR, Chen YC, Su CH, Su JH, Sung PJ, Yen PZ, Wang LS, Lai KH. Probing Anti-Leukemic Metabolites from Marine-Derived *Streptomyces* sp. LY1209. *Metabolites*, 2022 Apr; 12(4), 320. (IF: 4.1; Rank: 112/285 (39.3%), Biochemistry & Molecular Biology)
8. Kao TI<sup>#</sup>, **Chen PJ**<sup>#</sup>, Wang YH, Tseng HH, Chang SH, Wu TS, Yang SH, Lee YT,

- Hwang TL. Bletinib ameliorates neutrophilic inflammation and lung injury by inhibiting Src family kinase phosphorylation and activity. *British Journal of Pharmacology*, 2021 Oct; 178(20):4069-4084. (IF: 7.3; Rank: 25/277 (9.0%), Pharmacology & Pharmacy)
9. Lai KH<sup>#</sup>, **Chen PJ<sup>#</sup>**, Chen CC, Yang SH, El-Shazly M, Chang YC, Wu YH, Wu YH, Wang YH, Hsieh HL, Hwang TL. *Lophatherum gracile* Brongn. attenuates neutrophilic inflammation through inhibition of JNK and calcium. *Journal of Ethnopharmacology*, 2021 Jan; 264:113224. (IF: 5.4; Rank: 4/42 (9.52%), Integrative & Complementary Medicine)

### Reference publication

10. Nguyen NBA, El-Shazly M, **Chen PJ**, Peng BR, Chen LY, Hwang TL, and Lai KH. Unlocking the potential of octocoral-derived secondary metabolites against neutrophilic inflammatory response. *Marine Drugs*, 2023 Aug; 21(8):456 (IF: 5.4; Rank: 51/277 (18.4%), Pharmacology & Pharmacy)
11. Chen SH, **Chen PJ**, Lee CH, Wu YP, Ahorsu DK, Griffiths MD, Lin CY. Perceived stress mediating the association between mindfulness and resilience among registered nurses. *Psychology Research and Behavior Management*, 2023 Aug; 16:3035-3044 (IF: 4.3; Rank: 29/147 (19.7%), Psychology, Multidisciplinary)
12. Huang YQ, Illias AM, **Chen PJ**, Chien SY, Kuo YH, Ko CY, Chang CF, Wen ZH, Hwang TL, Sung PJ. 24-Dehydrohippuristanol, a Cytotoxic Spiroketal Steroid from *Isis hippuris*. *Tetrahedron Letters*, 2023 Jun; 123:154540 (IF: 1.8; Rank: 34/52 (65.4%), Chemistry, Organic)
13. Tsai YF, Yang SC, Hsu YH, Chen CY, **Chen PJ**, Syu YT, Lin CH, Hwang TL. Carnosic acid inhibits reactive oxygen species-dependent neutrophil extracellular trap formation and ameliorates acute respiratory distress syndrome. *Life Sciences*, 2023 May; 321:121334 (IF: 6.1; Rank: 35/277 (12.6%), Pharmacology & Pharmacy)
14. Tseng HJ, Kuo LM, Tsai YC, Hu HC, **Chen PJ**, Chien SY, Sheu JH, and Sung PJ. Sinulariaone A: A novel diterpenoid with a 13-membered carbocyclic skeleton from an octocoral *Sinularia* species. *RSC Advances*, 2023 Mar; 13(15):10408. (IF: 3.9; Rank: 74/178 (41.6%), Chemistry, Multidisciplinary)
15. Wang LS, **Chen PJ**, Cheng WC, Chang YC, El-Shazly M, Chen LY, Peng BR, Su CH, Yen PT, Hwang TL, and Lai KH. Chemometric-guided chemical marker selection: a case study of the heat-clearing herb *Scrophularia ningpoensis*. *Frontiers in Plant Science*, 2023 Mar; 14, 1153710. (IF: 5.6; Rank: 27/238 (11.3%), Plant Sciences)

16. Lin HC, Wang CC, Wu CF, Lin YH, Lee WC, **Chen PJ**, Chang YU, Su YC. Hinokitiol inhibits the viability of oral squamous carcinoma cells by inducing apoptosis and autophagy. *Anticancer Research*, 2023 Mar; 43(3):1167-1173 (IF: 2.0; Rank: 210/241 (87.1%), Oncology)
17. El-Gamil DS, ElHady AK, **Chen PJ**, Hwang TL, Abadi AH, Abdel-Halim M, and Engel M. Discovery of novel 5-methoxybenzothiophene hydrazides as metabolically stable Clk1 inhibitors with high potency and unprecedented Clk1 isoenzyme selectivity. *European Journal of Medicinal Chemistry*, 2023 Feb; 247, 115019. (IF: 6.7; Rank: 7/60 (11.7%), Chemistry, Medicinal)
18. Nguyen NBA, Chen LY, **Chen PJ**, El-Shazly M, Hwang TL, Su JH, Su CH, Yen PT, Peng BR, and Lai KH. MS/MS Molecular networking unveils the chemical diversity of biscembranoid derivatives, neutrophilic inflammatory mediators from the cultured soft coral *Sarcophyton trocheliophorum*. *International Journal of Molecular Sciences*, 2022 Dec; 23(24): 15464. (IF: 5.6; Rank: 66/285 (23.1%), Biochemistry & Molecular Biology)
19. Huang YQ, **Chen PJ**, Yang SN, Chien SY, Zheng LG, Wen ZH, Kuo LM, Sung PJ. 17,20-Epoxysteroids from octocoral *Isis hippuris* (Linnaeus, 1758). *Tetrahedron Letters*, 2022 Oct; 108, 154142. (IF: 1.8; Rank: 34/52 (65.4%), Chemistry, Organic)
20. Lai KH, Chen YL, Lin MF, El-Shazly M, Chang YC, **Chen PJ**, Su CH, Chiu YC, Illias AM, Chen CC, Chen LY, Hwang TL. *Lonicerae japonicae* flos attenuates neutrophilic inflammation through inhibiting oxidative stress. *Antioxidants*, 2022 Sep; 11(9), 1781. (IF: 7.0; Rank: 6/60 (10%), Chemistry, Medicinal)
21. Chi PJ, Wu KT, **Chen PJ**, Chen CY, Su YC, Yang CY, and Chen JH. The serial changes of neutrophil-lymphocyte ratio and correlation to weight loss after laparoscopic sleeve gastrectomy. *Frontiers in Surgery*, 2022 Sep; 9, 939857 (IF: 1.8; Rank: 131/212 (61.8%), Surgery)
22. El-Gamil DS, ElHady AK, **Chen PJ**, Hwang TL, Abadi AH, Abdel-Halim M, and Engel M. Development of novel conformationally restricted selective Clk1/4 inhibitors through creating an intramolecular hydrogen bond involving an imide linker. *European Journal of Medicinal Chemistry*, 2022 Aug; 238, 114411. (IF: 6.7; Rank: 7/60 (11.7%), Chemistry, Medicinal)
23. Yeh YT, Chen CY, **Chen PJ**, Hsieh YH, Chien SY, Liu CJ, Wen ZH, Hwang TL, Chen NF, Sung PJ. New 8,17-epoxybriaranes from octocoral *Briareum stechei* (Kükenthal, 1908). *Tetrahedron Letters*, 2022 Aug; 103, 153997. (IF: 1.8; Rank: 34/52 (65.4%), Chemistry, Organic)
24. Su YC, Wang CC, Weng JH, Yeh SA, **Chen PJ**, Hwang TZ, and Chen HC. 5-Methoxytryptophan sensitizing head and neck squamous carcinoma cell to

- cisplatin through inhibiting signal transducer and activator of transcription 3 (STAT3). *Frontiers in Oncology*, 2022 Jul; 12, 834941. (IF: 4.7; Rank: 85/241 (35.3%), Oncology)
25. Tseng HJ, Kuo LM, **Chen PJ**, Chen SH, Liu CJ, Chien SY, Tsai YC, Wu YJ, Su TR, Sung PJ. Chlorofurancembranoids A and B: Novel cembranoids from octocoral *Sinularia* sp. *Tetrahedron*, 2022 Jul; 119, 132851. (IF: 2.1; Rank: 28/52 (53.8%), Chemistry, Organic)
26. Zeng JS, Wu TY, **Chen PJ**, Chi WC, Chen NF, Wu YC, Fang LS, Chen SH, Kuo LM, Sung PJ. Coniferains C and D, new eunicellin-based diterpenoids from *Cladiella conifera*. *Heterocycles*, 2022 Jun; 104(8), 1461 (IF: 0.6; Rank: 49/52 (94.2%) Q4, Chemistry, Organic)
27. Zeng JS, Tseng CC, Tsai YC, Chen SH, **Chen PJ**, Chen NF, Wen ZH, Hwang TL, Sung PJ. Coniferains A and B, new eunicellin-based diterpenoids from the octocoral *Cladiella conifera* (Tixier-Durivault, 1943). *Phytochemistry Letters*, 2022 June; 49:88-92. (IF: 1.7; Rank: 143/238 (60.1%), Plant Sciences)
28. Wu CF, Hung TT, Su YC, **Chen PJ**, Lai KH, Wang CC. Endoplasmic reticulum stress of oral squamous cell carcinoma induces immunosuppression of neutrophils. *Frontiers in Oncology*, 2022 Mar; 12:818192. (IF: 4.7; Rank: 85/241 (35.3%), Oncology)
29. Tsai YF, Chen CY, Lin IW, Leu YL, Yang SC, Syu YT, **Chen PJ**, Hwang TL. Imperatorin alleviates psoriasiform dermatitis by blocking neutrophil respiratory burst, adhesion, and chemotaxis through selective PDE4 inhibition. *Antioxidants & Redox Signaling*; 2021 Oct; 35(11):885-903. (IF:7.468; Rank: 24/146 (16.4%), Endocrinology & Metabolism)
30. Kumar S, Wang YH, **Chen PJ**, Chang YC, Kashyap HK, Shen YC, Yu HP, Hwang TL. Design and synthesis of  $\beta$ -carboline and combretastatin derivatives as anti-neutrophilic inflammatory agents. *Bioorganic Chemistry*, 2021 Jun; 111:104846. (IF: 5.307; Rank: 8/56 (14.3%), Chemistry, Organic)
31. ElHady AK, El-Gamil DS, **Chen PJ**, Hwang TL, Abadi AH, Abdel-Halim M, Engel M. 5-Methoxybenzothiophene-2-carboxamides as inhibitors of Clk1/4: optimization of the selectivity and cellular potency. *Molecules*, 2021 Feb; 26(4):1001. (IF: 4.927; Rank: 65/179 (36.3%), Chemistry, Multidisciplinary)